BIRD LORE

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BIRD-LORE

A BI-MONTHLY MAGAZINE DEVOTED TO THE STUDY AND PROTECTION OF BIRDS AND MAMMALS

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THE PRESIDENT'S PAGE

IN THE battle for conservation, overconfidence would be fatal. Nevertheless, it is proper to rejoice when the tide is running strongly with us. The recent meeting at Baltimore, sponsored by the General Wildlife Federation, and the setting aside by President Roosevelt of a Wildlife Restoration Week in late March, are surely symbols of a living and growing public movement.

As the President's proclamation states, the cause is one "in which virtually our entire citizenship can participate wholeheartedly and enthusiastically, whether resident in the large metropolitan centers, with limited access to the great outdoors, or permitted to enjoy at first hand the wonders of nature."

At Baltimore the really extraordinary spectacle was presented of a group of public-spirited Americans presenting an all but united front against the various forces of destruction. Delegates from many states, and from non-governmental organizations all over the country, intelligently attacked questions of pollution, drainage, flood-control, fisheries, reclamation, water-fowl, and the rarely obvious fundamental research which underlies all such problems. Encouraging reports were heard not only from Canada but also from our neighbor on the south, Mexico, where, according to the latest report of the Chief of our own Biological Survey, many migratory game-birds are accorded a better chance of survival than they meet in certain great shooting areas of the United States. Federation representatives were able to point proudly to the passage of the Pittman-Robertson Act, which provides Federal aid to the states for wild-life restoration purposes—not by placing new restrictions on gunners, employing more game-wardens, or encouraging the pen-raising of birds to be liberated for sport, but rather by the more enduring method of assuring restoration of natural habitat and its permanent maintenance.

Many persons who attended the Baltimore congress came away with a feeling that the General Wildlife Federation is going to carry through to its objectives and that, under the selfless leadership of Jay Darling, it is bound to bring about an abatement in campaigns by groups of special pleaders and to foster a realization of the fact that the welfare of North American wild life ultimately depends upon the restitution of a balanced nature on a continental scale.

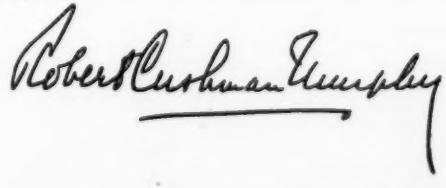

Photo by B. M. Acosta

"They are merely water poured into the already-thin soup." Whiteface Mountain, in the Adirondacks, after it had been 'developed' for motor tourists

BIRD-LORE
MARCH–APRIL, 1938

Conservation Esthetic

By Aldo Leopold

BARRING love and war, few enterprises are undertaken with such abandon, or by such diverse individuals, or with so paradoxical a mixture of appetite and altruism, as that group of avocations known as outdoor recreation. It is, by common consent, a good thing for people to get back to nature. But wherein lies the goodness, and what can be done to encourage its pursuit? On these questions there is confusion of counsel, and only the most uncritical minds are free from doubt.

* * *

Recreation became a problem with a name in the days of the elder Roosevelt, when the railroads which had banished the countryside from the city began to carry the city-dweller, *en masse*, to the countryside. It began to be noticed that the greater the exodus, the smaller the per capita ration of peace, solitude, wild life, and scenery, and the longer the migration to reach them.

The automobile has spread this once mild and local predicament to the outermost limits of good roads —it has made scarce in the hinterlands something once abundant in the back forty. But that something must nevertheless be found. Like ions shot from the sun the week-enders radiate from every town, generating heat and friction as they go. A tourist industry purveys bed and board to bait more ions faster, further. Advertisements on rock and rill confide to all and sundry the whereabouts of new retreats, landscapes, hunting-grounds, and fishing-lakes just beyond those recently overrun. Bureaus build roads into new hinterlands, then buy more hinterlands to absorb the exodus accelerated by the roads. A gadget industry pads the bumps against nature-in-the-raw; woodcraft becomes the art of using gadgets. And now, to cap the pyramid of banalities, the trailer. To him who seeks in the woods and mountains only those things obtainable from travel or golf, the present situation is tolerable. But to him who seeks something more, recreation has become a self-destructive process of seeking but never quite finding; a major frustration of mechanized society.

The retreat of the wilderness un-

der the barrage of motorized tourists is no local thing; Hudson Bay, Alaska, Mexico, South Africa are giving way, South America and Siberia are next. Drums along the Mohawk are now honks along the rivers of the world. *Homo sapiens* putters no more under his own vine and fig tree; he has poured into his gas-tank the stored motivity of countless creatures aspiring through the ages to wiggle their way to pastures new. Ant-like he swarms the continents.

This is Outdoor Recreation, Model 1938.

* * *

Who now is the recreationist, and what does he seek? A few samples will remind us.

Take a look, first, at any Duck marsh. A cordon of parked cars surrounds it. Crouched on each point of its reedy margin is some pillar of society, automatic ready, trigger finger itching to break, if need be, every law of commonwealth or commonweal to kill a Duck. That he is already overfed in no way dampens his avidity for gathering his meat from God.

Wandering in the near-by woods is another pillar, hunting rare ferns or new Warblers. Because his kind of hunting seldom calls for theft or pillage, he disdains the killer. Yet, like as not, in his youth he was one.

At some near-by resort is still another nature-lover—the kind who writes bad verse on birchbark. Everywhere is the unspecialized motorist whose recreation is mileage, who has run the gamut of the National Parks in one summer, and now is headed for Mexico City and points south.

Lastly, there is the professional, striving through countless conservation organizations to give the nature-seeking public what it wants, or to make it want what he has to give.

Why, it may be asked, should such a diversity of folk be bracketed in a single category? Because each, in his own way, is a hunter. And why does each call himself a conservationist? Because the wild things he hunts for have eluded his grasp, and he hopes by some necromancy of laws, appropriations, regional plans, reorganization of departments, or other form of mass-wishing, to make them stay put.

* * *

Recreation is commonly spoken of as an economic resource. Senate committees tell us, in reverent ciphers, how many millions the public spends in its pursuit. It has indeed an economic aspect—a cottage on a fishing-lake, or even a Duck-point on a marsh, may cost as much as the entire adjacent farm.

It has also an ethical aspect. In the scramble for unspoiled places, codes and decalogues evolve. We hear of 'outdoor manners.' We indoctrinate youth. We print definitions of 'What is a sportsman?' and hang a copy on the wall of whosoever will pay a dollar for the propagation of the faith.

It is clear, though, that these economic and ethical manifestations are results, not causes, of the motive force. We seek contacts with nature because we derive pleas-

Photo by A. D. Cruickshank

"The deer . . . are dwarfed by malnutrition"

ure from them. As in opera, economic machinery is employed to create and maintain facilities. As in opera, professionals make a living out of creating and maintaining them, but it would be false to say of either that the basic motive, the *raison d'être*, is economic. The Duck-hunter in his blind and the operatic singer on the stage, despite the disparity of their accoutrements, are doing the same thing. Each is reviving, in play, a drama formerly inherent in daily life. Both are, in the last analysis, esthetic exercises.

* * *

Public policies for outdoor recreation are controversial. Equally conscientious citizens hold opposite views on what it is, and what should be done to conserve its resource-base. Thus the Wilderness Society seeks to exclude roads from the hinterlands, and the chamber of commerce to extend them, both in the name of recreation. The game-farmer kills Hawks and the bird-lover protects them, in the name of shotgun and field-glass hunting respectively. Such factions commonly label each other with short and ugly names, when, in fact, each is considering a different component of the recreational process. As I shall show shortly, these components *differ widely in their characteristics or properties*. A given policy may be true of one but false for another.

It seems timely, therefore, to segregate the components, and to examine the distinctive characteristics or properties of each.

We begin with the simplest and most obvious: the physical objects which the outdoorsman may seek, find, capture, and carry away. In

this category are wild crops such as game and fish, and the symbols or tokens of achievement such as heads, hides, photographs, and specimens.

All these things rest upon the idea of *trophy*. The pleasure they give is, or should be, in the seeking as well as in the getting. The trophy whether it be a bird's egg, a mess of trout, a basket of mushrooms, the photograph of a bear, the pressed specimen of a wild flower, or a note tucked into the cairn on a mountain peak, is a *certificate*. It attests that its owner has been somewhere and done something—that he has exercised skill, persistence, or discrimination in the age-old feat of overcoming, outwitting, or reducing-to-possession. These connotations which attach to the trophy usually far exceed its physical value.

But trophies differ in their reactions to mass-pursuit. The yield of game and fish can, by means of propagation or management, be increased so as to give each hunter more, or to give more hunters the same amount. During the past decade a profession of wild-life management has sprung into existence. A dozen universities teach its techniques, conduct research for bigger and better wild animal crops. However, when carried too far, this stepping-up of yields is subject to a law of diminishing returns. Very intensive game- or fish-management lowers the unit value of the trophy by artificializing it.

Consider, for example, a trout, raised in a hatchery and newly liberated in an over-fished stream. The stream is no longer capable of natural trout production. Pollution has fouled its waters, or deforestation and trampling have warmed or silted them. No one would claim that this trout has the same value as a wholly wild one caught out of some unmanaged stream in the high Rockies. Its esthetic connotations are inferior, even though its capture may require skill. (Its liver, one authority says, is also so degenerated by hatchery feeding as to forebode an early death.) Yet several over-fished states now depend almost entirely on such man-made trout.

All intergrades of artificiality exist, but as mass-use increases it tends to push the whole gamut of conservation techniques toward the artificial end, and the whole scale of trophy-values downward.

To safeguard this expensive, artificial, and more or less helpless trout, the Conservation Commission feels impelled to kill all Herons and Terns visiting the hatchery where it was raised, and all Mergansers and otters inhabiting the stream in which it is released. The fisherman perhaps feels no loss in this sacrifice of one kind of wild life for another, but the ornithologist is ready to bite off ten-penny nails. Artificialized management has, in effect, bought fishing at the expense of another and perhaps higher recreation; it has paid dividends to one citizen out of capital stock belonging to all. The same kind of biological wildcatting prevails in game-management. In Europe, where wild-crop statistics are available for long periods, we even know the 'rate of exchange' of game for predators. Thus, in Sax-

ony, one Hawk is killed to each seven game-birds bagged, and one predator of some kind to each three head of small game.

Damage to plant-life usually follows artificialized management of animals—for example, damage to forests by deer. One may see this in north Germany, in northeast Pennsylvania, in the Kaibab, and in dozens of other less publicized regions. In each case over-abundant deer, deprived of their natural enemies, have made it impossible for deer food-plants to survive or reproduce. Beech, maple, and yew in Europe; ground hemlock and white cedar in the eastern states; mountain mahogany and cliff-rose in the West are deer-foods threatened by artificialized deer. The composition of the flora from wild flowers to forest trees is gradually impoverished, and the deer in turn are dwarfed by malnutrition. There are no stags in the woods today like those on the walls of feudal castles.

On the English heaths reproduction of trees is inhibited by rabbits over-protected in the process of cropping Partridges and Pheasants. On scores of tropical islands both flora and fauna have been destroyed by goats introduced for meat and sport. It would be hard to calculate the mutual injuries by and between mammals deprived of their natural predators, and ranges stripped of their natural food-plants. Agricultural crops caught between these upper and nether millstones of ecological mismanagement are saved only at the cost of endless indemnities and barbed wire.

We generalize, then, by saying that mass-use tends to dilute the quality of organic crop trophies like game and fish, and to induce damage to other resources such as non-game animals, natural vegetation, and farm crops.

The same dilution and damage is not apparent in the yield of 'indirect' trophies, such as photographs. Broadly speaking, a piece of scenery snapped by a dozen tourist cameras daily is not physically impaired thereby, nor does any other resource suffer when the rate increases to a hundred. The camera industry is one of the few innocuous parasites on wild nature.

We have, then, a basic difference in reaction to mass-use as between two categories of physical objects pursued as trophies.

* * *

Let us now consider another component of recreation which is more subtle and complex: the feeling of isolation in nature. That this is acquiring a scarcity-value which is very high to some persons is attested by the wilderness controversy. The proponents of wilderness have achieved a compromise with the road-building bureaus which have the custody of our National Parks and Forests. They have agreed on the formal reservation of roadless areas. Out of every dozen wild areas opened up, one may be officially proclaimed 'wilderness,' and roads built only to its edge. It is then advertised as unique, as indeed it is. Before long its trails are congested, it is being dolled up to make work for CCC's, or an unexpected fire necessitates splitting it in two with a

"Kill all . . . Terns . . ." Photo by Dr. Frank N. Wilson

road to haul fire-fighters. Or the congestion induced by advertising may whip up the price of guides and packers, whereupon somebody discovers that the wilderness policy is undemocratic. Or the local chamber of commerce, at first quiescent at the novelty of a hinterland officially labeled as 'wild,' tastes its first blood of tourist-money. It then wants more, wilderness or no wilderness.

In short, the very scarcity of wild places, reacting with the *mores* of advertising and promotion, tends to defeat any deliberate effort to prevent their growing still more scarce.

It is clear without further discussion that mass-use involves a direct dilution of the opportunity for solitude; that when we speak of roads, camp-grounds, trails, and toilets as 'development' of recreational resources, we speak falsely in respect of this component. Such accommodations for the crowd are not developing (in the sense of adding or creating) anything. On the contrary, they are merely water poured into the already-thin soup.

* * *

We now contrast with the isolation-component that very distinct if simple one which we may label 'fresh-air and change-of-scene.' Mass-use neither destroys nor dilutes this value. The thousandth tourist who clicks the gate of the National Park breathes approximately the same air, and experiences the same contrast with Monday-at-the-office, as does the first. One might even believe that the gregarious assault on the outdoors enhances the contrast. We may say, then, that the fresh-air and change-of-scene component is like the photographic trophy—it withstands mass-use without damage.

* * *

We come now to another com-

ponent: the perception of the natural processes by which the land and the living things upon it have achieved their characteristic forms (evolution) and by which they maintain their existence (ecology). That thing called 'nature study,' despite the shiver it brings to the spines of the elect, constitutes the first embryonic groping of the mass-mind toward perception.

The outstanding characteristic of perception is that it entails no consumption and no dilution of any resource. The swoop of a Hawk, for example, is perceived by one as the drama of evolution, by another as a threat to the full frying-pan. The drama may thrill a hundred successive witnesses; the threat only one—for he responds with a shot-gun.

To promote perception is the only truly creative part of recreational engineering.

This fact is important, and its potential power for bettering 'the good life' only dimly understood. When Daniel Boone first entered into the forests and prairies of "the dark and bloody ground," he reduced to his possession the pure essence of 'outdoor America.' He didn't call it that, but what he found is the thing we now seek, and we here deal with things, not names.

Recreation, however, is not the outdoors, but our reaction to it. Daniel Boone's reaction depended not only on the quality of what he saw, but on the quality of the mental eye with which he saw it. Ecological science has wrought a change in the mental eye. It has disclosed origins and functions for what to Boone were only facts. It has disclosed mechanisms for what to Boone were only attributes. We have no yardstick to measure this change, but we may safely say that, as compared with the competent ecologist of the present day, Boone saw only the surface of things. The incredible intricacies of the plant and animal community—the intrinsic beauty of the organism called America, then in the full bloom of her maidenhood—were as invisible and incomprehensible to Daniel Boone as they are today to Mr. Babbitt. The only true development in American recreational resources is the development of the perceptive faculty in Americans. All of the other acts we grace by that name are, at best, attempts to retard or mask the process of dilution.

Let no man jump to the conclusion that Babbitt must take his Ph.D. in ecology before he can 'see' his country. On the contrary, the Ph.D. may become as callous as an undertaker to the mysteries at which he officiates. Like all real treasures of the mind, perception can be split into infinitely small fractions without losing its quality. The weeds in a city lot convey the same lesson as the redwoods; the farmer may see in his cow-pasture what may not be vouchsafed to the scientist adventuring in the South Seas. Perception, in short, cannot be purchased with either learned degrees or dollars; it grows at home as well as abroad, and he who has a little may use it to better advantage than he who has much. As a search for perception, the recreational stampede is footless and unnecessary.

There is, lastly, a fifth component: the sense of husbandry. It is unknown to the outdoorsman who works for conservation with his vote rather than with his hands. It is realized only when some art of management is applied to land by some person of perception. That is to say, its enjoyment is reserved for landholders too poor to buy their sport, and land administrators with a sharp eye and an ecological mind. The tourist who buys access to his scenery misses it altogether; so also the sportsman who hires the state, or some underling, to be his gamekeeper. The Government, which essays to substitute public for private operation of recreational lands, is unwittingly giving away to its field officers a large share of what it seeks to offer its citizens. We foresters and game managers might logically pay for, instead of being paid for, our job as husbandmen of wild crops.

That a sense of husbandry exercised in the production of crops may be quite as important as the crops themselves is realized to some extent in agriculture, but not in conservation. American sportsmen hold in small esteem the intensive game-cropping of the Scottish moors and the German forests, and in some respects rightly. But they overlook entirely the sense of husbandry developed by the European landholder in the process of cropping. We have no such thing as yet. It is important. When we conclude that we must bait the farmer with subsidies to induce him to raise a forest, or with gate receipts to induce him to raise game, we are merely admitting that the pleasures of husbandry-in-the-wild are as yet unknown both to the farmer and to ourselves.

Scientists have an epigram: ontogeny repeats phylogeny. What they mean is that the development of each individual repeats the evolutionary history of the race. This is true of mental as well as physical things. The trophy-hunter is the caveman reborn. Trophy-hunting is the prerogative of youth, racial or individual, and nothing to apologize for.

The disquieting thing in the modern picture is the trophy-hunter who never grows up, in whom the capacity for isolation, perception, and husbandry is undeveloped, or perhaps lost. He is the motorized ant who swarms the continents before learning to see his own back yard, who consumes but never creates outdoor satisfactions. For him the recreational engineer dilutes the wilderness and artificializes its trophies in the fond belief that he is rendering a public service.

The trophy-recreationist has peculiarities which contribute in subtle ways to his own undoing. To enjoy he must possess, invade, appropriate. Hence the wilderness which he cannot personally see has no value to him. Hence the universal assumption that an unused hinterland is rendering no service to society. To those devoid of imagination, a blank place on the map is a useless waste; to others, the most valuable part. (Is my share in Alaska worthless to me because I shall never go there? Do I need a road to show me the arctic prairies,

the Goose pastures of the Yukon, the Kadiak bear, the sheep meadows behind McKinley?)

It would appear, in short, that the rudimentary grades of outdoor recreation consume their resource-base; the higher grades, at least to a degree, create their own satisfactions with little or no attrition of land or life. It is the expansion of transport without a corresponding growth of perception which threatens us with qualitative bankruptcy of the recreational process. Recreational development is a job, not of building roads into lovely country, but of building receptivity into the still unlovely human mind.

Photo by A. D. Cruickshank

"The ornithologist is ready to bite off ten-penny nails"

A Recent Oil-Pollution and Its Effect on the Water-Birds of the San Francisco Bay Area

By Elmer C. Aldrich

THE inabilities of wild birds to survive harmful, unnatural conditions imposed upon them by man are illustrated in the following account of a recent oil-pollution.

On March 6, 1937, the Associated Oil tanker *Frank Buck*, on its way to the port at San Francisco, was rammed by a passenger boat, the *President Coolidge*, in the Golden Gate. As the tanker was sinking, it was towed one-half mile south of the Golden Gate to Land's End, where it was grounded just offshore. With its bow beneath the water, its cargo of oil was washed from its hold in great quantities; this process continued at least one month. From this one source the oil drifted rapidly both north and south. The commander of the U. S. Coast Guard Station at Bolinas stated that within one day the oil had spread to Bolinas Bay, which is 10½ miles north of the site of the accident.

Though from time to time water-birds have been troubled in this region by small amounts of oil on the water, the devastating effects from this accident reached large proportions in a short time. Dr. Joseph Grinnell, at the University of California, considered this time opportune for collecting injured and dead birds for skeletal material for the Museum of Vertebrate Zoölogy. On March 20 and 21, for this purpose, Howard Twining, Frank Richardson, and I went to the seashore, and spent the first day 20 miles south of San Francisco Bay, where we searched Halfmoon Bay, Montara, and Salada beaches. The following day we worked on the long sand-spit separating Bolinas Bay and Bolinas Lagoon and a short strip of beach north of the town of Bolinas, Marin County.

We saw oil in somewhat varying amounts in all of the places visited. I am not certain of the reason for this variation; it may have resulted from the steepness of the beach. Since oil floats on the water, it would naturally be deposited more easily where the water can slowly seep into the sand, leaving the stranded oil as residue. In some places the sand of the entire beach was iridescent black to a depth of 8 inches. For the most part, however, oil on the beaches was present on the surface of the sand in irregular blobs averaging perhaps 2 inches across and ½ inch in thickness. These blobs were heavy and of nearly the consistency of grease, the volatile parts gone, leaving an almost asphalt base. On the shore the masses of grease concentrated in the accumulations of driftwood, and in these places we looked in particular for dead birds. The thick

oil seems to hold together much debris in dense chunks that would not ordinarily be coherent. Finding small birds such as Murrelets in these masses was difficult, and doubtless some were overlooked in our censuses.

Birds for specimens were obtained in several ways. Most of them were taken by simply picking them up on the beach. Others were alive, yet incapacitated, and were chased down and caught. When captured, Murres usually gave a coarse squawk, Loons quacked, sounding like Mallards, and Western Grebes gave their regular grating call, but it sounded broken.

The disabled condition of these live birds, caused by the oil, certainly presented a pathetic sight. Some were so weak they could hardly raise their heads, yet the last bit of energy, in some instances at least, was being spent in attempts to preen their feathers. Many lay trembling and shivering because the oil had matted and separated the feathers, allowing the cold wind and rain to reach their skins. Some, no doubt, were in the last stages of starvation because of their inability to obtain food; their death from this cause was being hastened considerably by over-exertion resulting from preening and from exposure to the elements. Some of the live Murres, Gulls, and Western Grebes would manage to reach the bases of cliffs far back on the shore, and there they would occupy crevices where it was difficult to see them. Our approach to these hidden birds prompted them in some instances to make

Western Grebe with oil covering the white underparts and neck
Photo by Author

Oil would adhere to anything Photo by Howard Twiring

a rush for the surf. Here it was interesting to note how the various species reacted to the pounding breakers. Western Grebes and Scoters, which are accustomed to surf-swimming, would attempt to dive through the breakers no matter how exhausted they were. Murres, however, not being well acquainted with the surf, would usually be tumbled over and over and often promptly returned to shore.

Some of the birds found dead on the beach were difficult to identify. Some were greased to the extent that they were just tallied as "unidentifiable" on the census. Even outlines of bills and heads were blanketed over, and some birds looked like oval masses of black grease with a few feathers showing on the surface. Others had scarcely any oil on them and might have died by ingesting oil while feeding.

The distribution of oil on the bodies of many individuals of a certain kind reflected the similarity of habits of all members of that particular species. This was especially characteristic of Sanderlings; all of them were affected identically by the oil. At a distance they presented an appearance similar to that of Red-backed Sandpipers with black bellies in breeding plumage. The equal amount of black and the distribution of it on all the Sanderlings indicated remarkably the similar abilities of all the individuals seen of this species to dodge the constantly and quickly-oscillating waves of a certain depth of perhaps 2 inches. Sanderlings when not feeding were often seen busily preening their breast-feathers.

Snowy Plovers showed less oil on

their plumage because they do not stay so close to the water's edge as do Sanderlings, but higher on the shore and completely away from the water. Only their feet were greasy and several times they were seen running as if club-footed, hampered by an adhering knob of a mixture of oil and sand. None of either of these two species of shore-bird was found dead.

Other birds such as Gulls, with less specialized habits than the two birds just mentioned, were affected in a variety of ways. Some were completely oiled. These probably had alighted in the thick oil out beyond the surf. As were the Sanderlings, other kinds were oiled only on the belly and breast, and may have got it by wading or dipping into the sea with wings poised in the air as they are sometimes seen to do. This action was observed in several instances. Truly an odd sight was an adult Western or Glaucous-winged Gull completely devoid of oil except for a black spot of it behind the eye, resembling, then, an overgrown Bonaparte's Gull in winter plumage, which also has a similar but natural spot. Sometimes this oily mark was in the form of a broader spot, or a completely symmetrical ring encircling the neck. The positions of the irregularly placed spots reflected the habits of the Gulls, because frequently they were seen scratching their heads with oily feet.

As shown by the accompanying tables, 269 dead birds were found on 5½ miles of searched beach. An example of the numbers of dead birds that were possible to be found is illustrated from a 200-yard stretch

A California Murre died while crawling away from the breakers
Photo by Howard Twining

where birds were found particularly abundant: 7 California Murres, 3 Western Grebes, 3 White-winged Scoters, 1 Surf Scoter, 1 California Gull—a considerable mortality.

On Bolinas Spit, north of San Francisco Bay, more Western Grebes were found affected than were California Murres. The reverse of this was true south of San Francisco Bay on Halfmoon Bay, Montara and Salada beaches. The reason for this may be attributed, I believe, to the large numbers of Western Grebes frequenting the small lagoon behind Bolinas Spit. Here the Grebes are commonly seen flying over the large sand-bar between the ocean and the nearly enclosed lagoon.

The following are tables for the various localities from which collections were made, and these are supplemented by a list of Gordon Bolander's findings, his area not being visited by our party.

Halfmoon Bay: Three-fourths of the entire length of beach was covered, comprising 2½ miles. A total of 10 species and 101 individuals.

California Murre	59
Western Grebe	15
White-winged Scoter	8
Surf Scoter	3
Scoter (species?)	3
Red-throated Loon	3
Murrelet (species?)	2
Cormorant (species?)	1
Glaucous-winged Gull	1
Western Gull	1
California Gull	1
Gull (species?)	1
Pigeon Guillemot	1
Ancient Murrelet	1
Unidentifiable	1

Montara Beach: Length of beach covered was ¾ mile. A total of 10 species and 59 individuals seen.

California Murre	41
White-winged Scoter	4
Surf Scoter	3
Western Grebe	3
Scoter (species?)	2
Ancient Murrelet	2
Brandt's Cormorant	1
Pacific Loon	1
Cassin's Auklet	1
Unidentifiable	1

Salada Beach: Length of beach covered was 1½ miles. A total of 12 species and 36 individuals seen.

California Murre	10
Western Grebe	10
Red-throated Loon	3
White-winged Scoter	3
Murrelet (species?)	2
Gull (species?)	2
Scoter (species?)	1
Merganser (species?)	1
Baird's Cormorant	1
Teal (species?)	1
Surf Scoter	1
Pacific Kittiwake (immature)	1

Bolinas Spit: Length of beach covered was 1¾ miles. A total of a possible 14 species and 68 individuals seen.

Western Grebe	31
California Murre	11
Red-throated Loon	7
Surf Scoter	5
Ruddy Duck	2
Marbled Murrelet	2
Loon (species?)	2
Scoter (species?)	2
Pacific Loon	1
Eared Grebe	1
Murrelet (species?)	1
Glaucous-winged Gull	1
Brandt's Cormorant	1
Unidentifiable	1

San Francisco Beach: A distance of 7½ miles of beach covered by Mr. Gordon Bolander, a competent observer, March 11, 1937. A total of 13 species and 188 individuals recorded.

California Murre	84
Western Grebe	35
White-winged Scoter	23
Gull (Western and Glaucous-winged)	13
Marbled (?) Murrelet	12
Surf Scoter	11
Loon (species?)	4
California Gull	1
Red-throated Loon	1
Cormorant (species?)	1
Scaup (species?)	1
Rhinoceros Auklet	1
Belted Kingfisher	1

The Marsh Hawk and Its Hunting

By **Paul L. Errington**

THERE is a mellowness about the northern prairie as the midday heat of August gradually moderates and the cooling nights of September hint of frosts to come. This is a season of young creatures learning to live, and for many it is a season of lush plenty. In particular, the eaters of seeds and roots fatten in their harvest and these in turn fatten the flesh-eaters that prey upon them.

Nevertheless, despite Nature's autumnal lavishness, not all of the young creatures find food so readily to be had. The buffy colored juvenile Marsh Hawks, which are often conspicuous on the prairie landscape in late summer, have been only recently 'on their own' and are likely to be hungry in proportion to their clumsiness and inexperience.

Whereas an adult Marsh Hawk usually satisfies its own needs with such ease at this season that it may seldom be seen hunting, the activities of a juvenile may be observed at about any time during the daylight hours. The juvenile quarters low over field and meadow and marsh, now and then wheeling and dipping suddenly downward. It may resume its flight, or it may stay down, perhaps hidden in the ground vegetation; but even though it may remain out of sight for several minutes, the chances are that it did not succeed in catching anything. Again and again, the fruitless procedure may be repeated until one wonders what prevents these birds from virtually starving after separation from their parents.

The clumsiness of the juveniles is, of course, only comparative. In terms of human agility, the movements of a Marsh Hawk that has been flying only a couple of weeks may seem quite skilful, but it requires more precision and speed than young Hawks have at first to catch small mammals and birds that don't want to be caught and have ways of dodging or slipping into the weeds. The young Hawks, then, live on what they can get, by feeding on the leavings of older Hawks, scavenging along highways, lakeshores, etc., and supplementing their diet with the grasshoppers, beetles, garter snakes, and the few mice and fledgling birds that happen to be sluggish or unlucky about escaping. Sometimes, from inexperience or desperation, they may attack animals of sizes that adults would leave alone, possibly to receive a decisive beating off, as by a cock Pheasant that wasn't in the mood to tolerate such nonsense.

By late fall the young Hawks have learned more about both their

Photo by Dr. Frank N. Wilson

"an adult Marsh Hawk usually satisfies its own needs with . . . ease"

limitations and those of their prospective prey, and the daily business of getting something to eat has lost much of its uncertainty. For young and old, alike, staple diet consists of the mice of stubble field and hayland, with what small birds and roadside carcasses are easily obtainable. Dead and crippled gamebirds lost by human hunters also prove to be an acceptable source of food.

The hunting habits of the Marsh Hawk are rather intermediate between those of the soaring *Buteos* and the dashing *Accipiters*. It is slow enough in flight so that most birds on the wing can avoid or annoy it with safety, but it is capable of remarkably quick maneuvering at close range. From its low, gliding flight, an adult Marsh Hawk can dive with deceptive swiftness and can snatch on all sides with its long legs—even turning on its back in the air to strike overhead.

The grasp of the Marsh Hawk is weak for a raptor that looks so large, and its talons are therefore more adapted for seizing and holding its victims than for piercing vital parts. Much of the actual killing is done by means of the beak and often in a haphazard manner and incidental to the eating of the prey as the Hawk tears away in the region of neck and throat. Mice and small birds usually die soon after capture as a joint result of talon punctures and beak wounds; larger prey may remain alive for several minutes until the cutting of major blood vessels or the infliction of injuries sufficient to cause death.

It is chiefly through struggles with prey near the limit of its ability to handle that the Marsh Hawk has got the reputation of

being terribly cruel, of eating its victims alive. But why single out the Marsh Hawk or any other bird of prey as a bad example? Nearly everyone, I suppose, has watched a Robin pulling an earthworm out of the ground, but, so far as I am aware, no one has berated the Robin for its cruelty. Similar lack of regard for the sensibilities of prey may be seen by anyone who observes other of our favorite insectivorous birds in their feeding. It is the rule in Nature for wild creatures to treat food as food with a matter-of-factness that is neither moral nor immoral, the treatment depending upon what the food is, the hunger and the adaptations of the feeders, and circumstances in general. In natural relationships there is much that is harsh and unfeeling but little that is deliberately cruel. Conscious mercy is a rare quality except in civilized man, and wild creatures, living essentially as they always have, should not be condemned for not showing it—especially since man, himself, is merciful largely as it may please him to be.

Fundamentally, the Marsh Hawk's securing of food follows the same pattern of instinctive and acquired behavior that underlies the feeding reactions of many animals. It may display a degree of 'preference,' and its hunting seems modified by experience and the establishment of routine, but, in the main, what it takes is determined by what suitable and recognized food is conveniently available. Whether it feeds upon what man prizes or what man doesn't care about is a secondary matter.

Response of the Marsh Hawk to relative availability of food can be studied to good advantage during the winter months, when there may be few enough of the Hawks remaining to permit watching them as individuals and when snow on the ground may aid in piecing together various bits of 'sign' into a more intelligible story. As in the fall, mice continue to be a staple item of diet, these being under ordinary conditions easiest to get. Other things, however, may rise or decline in prominence as Marsh Hawk food. Let Tree Sparrows or Horned Larks drift in by thousands and they will not be neglected by predators. Let a Bob-white population start weakening and dying on its roosts from starvation or let it swell past the number that its coverts can accommodate, and Marsh Hawks, as well as other predators, will naturally avail themselves of those of the birds they may now find catchable, though they may have succeeded in catching few if any of them earlier in the winter.

With the coming of spring and summer, we may see the greatest diversity in food habits of the Marsh Hawk. Striped ground squirrels (gophers) come out of hibernation, and hosts of migratory birds return, to pass on or to begin nesting, and these share with the mice the brunt of the Marsh Hawk pressure. Then, there are young Marsh Hawks with young appetites to be kept at least partially satisfied, and the parent birds—especially the males—have to work hard to bring in enough food. At this time, the most available prey is the season's increase of

Photo by Howard Cleaves

"gophers come out of hibernation"

Sparrows, Blackbirds, Meadowlarks, ground squirrels, and rabbits (cottontails up to about one-third grown and jack-rabbits of corresponding sizes). Young domestic chickens (up to half-grown) may be heavily preyed on if favorable opportunities arise, and such prey as young Ring-necked Pheasants (up to three-fourths grown), Flickers, Rails, Mourning Doves, and frogs may be taken with some frequency. Indeed, nearly anything of manageable size in Marsh Hawk habitats may appear at the nests, including such items as young Screech Owls and pocket gophers.

On the whole, the young of various prey species are particularly subject to predation because of the disadvantages of immaturity, but local environmental changes may also cause adults of smaller kinds to suffer. The effects of drought in increasing the vulnerability of marsh-dwelling forms to enemies, generally, has been noted from field observations; the flooding of low ground, the burning or mowing or plowing of a field, the grazing of a roadside by livestock, and other commonplace events likewise have their biological aftermaths. Opportunists as all adaptable wild animals are, the Marsh Hawks take their prey where they find it, and when the prey in one situation grows too wary or too secure, or otherwise becomes unprofitable hunting, they seek elsewhere. So it goes until buffy juveniles again quarter over the late summer prairie, and we leave the annual cycle where we picked it up.

This article has dealt with neither the economic aspects of predation by Marsh Hawks nor with the role of the species in Nature. These are matters concerning which our calculations are very apt to be guesswork until we know vastly more than we do now of what difference predation actually makes to a given prey species. Meanwhile, it would be well for us to recognize that population levels of many common prey species seem to be governed by factors far more potent than predation and that much of predation tends to be neutral in its net effect. In northwest Iowa, for instance, we have found between four and five per cent of the summer food items of the Marsh Hawk to be young Pheasants, yet the seasonal decline in average size of the Pheasant broods was observed to be no more rapid on land hunted over by a heavy Marsh Hawk population than it was miles distant where Marsh Hawks were rarely if ever seen.

We might as well recognize also that there is much about the mechanisms of Nature that we will never understand, but such should not spoil our enjoyment of the glimpses that may be revealed to us. To many of us the beauty of the out-of-doors is dependent upon the completeness of the ecological picture it presents, upon how well the native fauna and flora characteristic of it have been preserved. The Marsh Hawk, among the other wild creatures that eat and are eaten, truly contributes to the irreplaceable natural values that, through conservation, we are trying to perpetuate.

HAIL AND FAREWELL

Punctual trumpet-calls today
  Burst from a thousand throats;
I heard a Purple Finch's gay,
  Multitudinous notes.

Three lovely bell-tones stirred the air—
  A Kinglet's new-come hail;
The whistle of a Solitaire
  Rang from an azure trail.

Barn Swallows twittered on their round,
  Song Sparrows cried, "sweet, sweet!"
For all the harps of heaven sound
  When spring and April meet!

—Lulu Piper Aiken

Home to the Sea

By 'Camper'

ATLANTIC waves are rushing in before southerly gales to vent their futile fury against the ramparts of Little Green Island. Crossbills chatter as they sweep in headlong flocks from spruce stand to spruce stand. Lobster boats punctuate the serene quiet with the friendly thudding of their motors. Captain Davis is refurbishing buildings and boats, making ready for the annual migration to the Audubon Nature Camp.

But preparations for the return are going forward not alone on the lovely Maine island. Far to the southward, black ribbons of Cormorants are already streaming northward toward Old Hump Ledge—or soon will be. Parula Warblers sing the insignificant song with which they will defend their territories among the spruces on Hog Island. Hermit Thrushes test the bells that will announce vespers to the deer of Long Cove. Herring Gulls, some wearing the bright bracelets given them by campers, are already marching with the feathered host, and will be on hand to greet the arriving naturalists. Here and there, in numerous states, and even beyond our borders, human beings are beginning to concern themselves with a migration that, for many of them, will be a homecoming.

In a little over two months—on June 10—the Audubon Nature Camp will open for its third session on Muscongus Bay, Damariscotta, Maine. More and more, the indication is, people who have come to the camp are returning for a second and third visit. Those who have lived with the birds, the plants, the mammals, the sea creatures, of this rich Maine coast, those of us who have come to see this life through the eyes of the young naturalists with whom the camp is staffed, cannot think of June days without a sense of nostalgia. We came, in our ultimate past, from the sea, the biologists tell us. As we think back to the days at the camp, its life and the sea seem to exert an equal pull; for many of us, as for the Cormorants, the Gulls, and the Warblers, this pull is toward what seems a place to which we must needs go.

That we who have been at the camp, have such a feeling is not strange. Here, under the inspiration and leadership of a group of young naturalists, come together a group of people—for the most part also young—who share a common interest and enthusiasm, an absorption in nature. Here, under almost ideal living conditions, trained leaders unravel nature's tangled skeins for the information and pleasure of the campers. The two-week periods pass all too quickly. Most talk is shop-talk; it would be a waste of precious time and company to talk anything else.

Photo by R. T. Peterson

The Campers Visit Monhegan

For most of us, almost everything we encounter at the camp is new. There are hosts of new birds, new plants—and, of course, new insects and fascinating dwellers on and beneath the rocks of the Bay. Our 'life lists,' in whatever field, more than mushroom—they expand with an exciting brilliance that seems more like a skyrocket than a lowly fungus. Almost every minute, it seems, we acquire a new, vivid experience; we cannot assimilate them all at once but must store them for our pleasure and rumination through the coming winter.

Those of us who are engaged in teaching, whether in a school, settlement house, or scout troop, find at the camp so much more than a new galaxy of life! We are taught, in calculated terms, how to pass on, to our own groups, the lessons of the camp; indeed, every one of us is 'fitted' with an individual program that is invaluable in solving our own teaching problems. Perhaps even more useful is what we indirectly learn from the naturalists who lead the camp activities, from their own approach to camp problems, from their own infectious enthusiasm for the work they are doing. No one who has shared their obvious enjoyment in their work could ever again approach the teaching of nature study and conservation as a dull, unimaginative chore.

One clue to the reason for their

zest unquestionably lies in their approach to the entire study of nature. They are not interested in mere lists. *How* and *Why* are far more important than *What*—though they use *What* as the starting-place. Piece by piece, so far as the pieces are known, they fit together the literally marvelous wild-life picture of the region about the Audubon Nature Camp. The complex relationships of the animals and plants are analyzed before our eyes. There is drama here, the drama of the struggle for survival, the unceasing competition for the advantages that make survival possible. In human terms, this is the class struggle raised to its *n*th power, but it is a class struggle that will be ended only with the destruction of the universe itself.

Here, on the wave-beaten crags of the Maine coast, there stands before our eyes the unconquerable tenacity of life. Ice may grind, and waves may batter, but if there are a few cubic inches of soil, there we are shown plants—and where there are plants we are shown animal life. In this concept of the ubiquitousness of life, given a tolerant environment, we have the germ of the conservation idea: give wild life its food and cover, and wild life will survive.

As we realize the indispensability of the basic necessities of soil, water, food, and cover, we realize how impotent are many of the so-called conservation measures on which we yearly spend many thousands of dollars. As we understand that these habitats about us can carry only so many animals, and that these animals reproduce so fast they constantly tend to overflow their environment, we appreciate the need for predators, and for parasites; we begin to understand that man may crop in a limited way but that there is also a limit beyond which he cannot go, no matter how great his need and desire, without critical danger to wild life.

In fact, everything about us begins to have a significance that makes the out-of-doors a far more exciting place than it was before. The old beauty lives on, never to die, but it is a richer beauty, more meaningful and, consequently, infinitely more satisfying. We carry away from the Audubon Nature Camp a world that is literally new to us. We have met this world with the finest company in the world—people who share our enjoyment and interest. Is it any wonder that, to many Audubon Campers, Muscongus Bay has begun to seem like a real home?

THE GREAT BLUE HERON

He knows the frothing of the rain-lashed surf
Along the turbid river's desolate shore
In gray November days. Aloof he stands,
Motionless, grave, while sandpipers pursue
Receding waves with querulous cries, or flash
In sudden social flight compact as one.
On summer eves, while the long sunset light
Lingers upon far hills, in dim lagoons
He wades, lank as a living skeleton,
To wield among the frogs his deadly spear.
Anon he springs to flight well-poised between
Slow-flapping wings and disappears, silent
And huge in gathering gloom.
On sun-drenched days
From lisping margins of the glistening beach
He mounts in opening spirals, floating wide
On the sustaining air; his shadow draws
Across the hidden places of the marsh
Startling his fellows in their quiet preserves.
Each turns his snake-like neck, and two or three,
Knowing the call, spring up with dangling legs,
Unfold the arching coverts of broad wings
And, rocking between measured strokes, arise
Heavily. Soon to larger freedom risen
They join their leader in the towering void;
Commingling circles of their soaring flight
Weave and unweave a rhythmic harmony;
They drift and run upon the steady wind
Far seen in the high heaven. Suddenly,
Poising, they veer, and then, with gathering speed
Ride down the wind and vanish, swept away,
In scintillating light.
On empty beach
The lonely watcher bows his blinded eyes
To muse upon the mystery of wings,
Wondering by what quiet inlet of the sea
The ecstasy he saw and felt shall end.

—Tertius van Dyke

Bird-Lore

A Bi-Monthly Magazine devoted to the Study and Protection of Birds and Mammals

Edited by WILLIAM VOGT
Contributing Editor, FRANK M. CHAPMAN

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BIRD-LORE'S MOTTO:
A Bird in the Bush Is Worth Two in the Hand

THE National Resources Committee is to be congratulated for certain enlightened land-drainage recommendations included in the 1937 Revision of their publication, *Drainage Basin Problems and Programs*. And the conservationists who have campaigned for more intelligent and economical treatment of our marshes and swamps should share the congratulations since they, more than anyone else, have brought to public notice the marsh and swamp destruction perpetrated by Federal funds.

Some of the statements in the report are of considerable interest to conservationists. "Of the 84,000,000 acres of land in organized [drainage] enterprises, 7,400,000 have not beendrained sufficiently to permit the growth of crops, and an additional 10,700,000 have been drained sufficiently to permit cultivation only in dry years. . . . Approximately one-twelfth of the land in organized drainage enterprises is in districts which have become inactive. Most of this land is in the Florida Everglades and in northern Minnesota, in both of which attempts have been made to drain land largely unsuited for agriculture. . . .

". . . In some instances, drainage for purposes of agricultural production or pest-mosquito control has been undertaken in the name of malaria control. In other instances, there is doubt as to the desirability of malaria-control drainage when it is compared with other methods of malaria control and with damages to wild-life habitat. Malaria control or pest-mosquito eradication is the object of most of the land-drainage now being undertaken or planned. The resulting destruction of wild-life habitat is sometimes needless, particularly in coastal marshes, and has aroused opposition. . . .

". . . it is the opinion of the Subcommittee on Drainage Policy and Projects that a national drainage policy involves the following objectives. . . .

"In view of the apparent surplus of land already in cultivation, public funds should not be expended to bring new land into cultivation by drainage, unless investigation has disclosed that the drainage would be economically feasible . . .

"*Under no circumstances should Federal financial assistance be given to drainage projects unless responsible local interests guarantee that the drainage works will be operated and maintained in good order . . .*"

The italics are ours. This sentence at once indicates where lies the major weakness in past drainage programs, and points the way to the most important safeguard against future futile drainage. If a drainage system is not beneficial enough to justify the cost of maintenance, it should not have been installed in the first place. That is—or ought to be—axiomatic. We have no quarrel with much of the agricultural drainage of the Middle West; it, and it alone, in many regions made agriculture possible. We do, however, quarrel with systems, as in Florida, Minnesota, and many other states, where land that should have been preserved for wild life was ruined, with profit to no one except real-estate speculators.

If mosquito-control ditches—whether designed for malaria or pest control—cannot be kept clean, and themselves free from breeding mosquitoes, why dig them?

Which brings us back to the italicized paragraph: ". . . no . . . Federal assistance . . . unless responsible local interests guarantee . . ." So far as we know, there is not a single northeastern state in which "responsible local interests" are able to guarantee maintenance. One legislature cannot make appropriations that are binding on subsequent legislatures; even New Jersey, with a state law earmarking a proportion of tax receipts for mosquito control, has not been able, according to local mosquito control authorities, to keep all ditches clean.

It is to be hoped that these recommendations by the National Resources Committee will terminate the irresponsible use of Federal funds to the disadvantage of both wild life and the lowly taxpayer.

THE SANCTUARY FRONT

Condition of the Great White Heron and Spoonbill; Progress and Obstacles in Other Fields

Three years ago we made our first survey to determine the exact status of the Great White Heron. The population curve of that magnificent species had been dropping steadily downward, and we had no idea whether we could check its fall or not. On that first airplane survey of February, 1935, Alexander Sprunt counted a little better than 200 Great Whites. How many of these birds were breeding adults? Would this number be sufficient to start the curve upward again, if wardens were put on the job to prevent the killing of the young? The answers to these questions were quite beyond us. One thing we did know—we were going to save the Great White Heron from extinction if it were possible to do so.

Last January another careful survey was made of the entire range of the Great White Heron. With the coöperation of the U. S. Coast Guard, two intensive days were spent flying in a zig-zag course that didn't overlook a single nesting key or, for that matter, even so much as a lone feeding bird on one of the isolated banks. Actually, we covered more than 500 air-miles within the limited range of the Great White, which is a fair index to the amount of criss-cross flying that was done. We are now able to report that the present Great White Heron population stands at 585 individuals.

To those of us who have watched the ups and downs of this bird from month to month over the last three years, this gain is nothing short of astounding! A low of 146 individuals was reached following the September hurricane in 1935. Since that dark day the Great White has shown a 300 per cent gain. Equally astounding is the fact that this improvement has been accomplished without a warden needing to fire a single shot; without making a single arrest! An explanation of this situation will serve as an excellent illustration of the 'watchdog policy' of our wardens.

When our first warden went on the job for the purpose of giving special protection to the Great White Heron, there was a good deal of attendant publicity throughout the Florida Keys. I do not refer entirely to newspaper publicity. In spite of their efficient organization and highly developed ability to dramatize, the newspapers are still unable to compete with the word-of-mouth accounts that spread with such great rapidity over isolated portions of the country. One obvious advantage (or disadvantage!) to this more primitive method of communication is that the story is completely overhauled and newly embellished with each retelling. I haven't the slightest doubt that within a few days after our first Great White Heron warden went on the job, the 'conch grape-vine' was reporting anywhere from six to a dozen wardens concentrated in the key area. And possibly two or three F. B. I. men were thrown in on the side for good measure!

In addition, we had the invaluable support of the Coast Guard Air Service from the very start, and in their frequent patrols over that region, the big twin-motor amphibians seldom passed a fishing or sponging boat that lay close to a nesting key without roaring down near it with the motors wide open "just to let them know that we're on the job." The psychological effect of such a maneuver can be well imagined.

When necessary changes in warden personnel were made, or an additional warden employed, the grape-vine stories were given fresh impetus. And from all that we can see, and all that we can learn through first-hand reports, the men who were slowly destroying the largest of our North American Herons 'laid off,' to use the exact parlance, almost from the very day that our campaign began.

It was inspiring to dip low over the keys in January and see large numbers of young

The Audubon Association invites coöperation. Signs similar to this have been set in strategic points along Florida highways

Great Whites in the nests. We flew over key after key and saw one series of nests after another, most of them containing young already old enough to exhibit the wild and prideful aspects of their race. But, best of all, we knew that they were safe; we knew that they would shortly spread their wings and thereby bring the Great White Heron that much nearer to its rightful place in the avifauna of North America.

The January survey revealed other healthy signs in addition to the actual gain in numbers. For one thing, the population is now spread more evenly over the range. We found about 36 per cent of the total in Florida Bay, another 36 per cent in the 'middle sector' from the Spanish Keys to Key West, and the remaining 28 per cent on the scattered keys from Key West to the Marquesas. The significance of this will be better understood if it is realized that approximately 200 Great Whites have moved into Florida Bay since the disastrous hurricane of 1935, which almost completely depopulated that region. Another welcome sign was the appearance of Würdemann's Heron, the rare and interesting hybrid form between the Great White and Ward's Heron.

We are not going to be too optimistic about the Great White Heron even in the face of these gratifying results. It seems obvious that wardens must be kept on the job for some years to come, and in the meantime, considerable attention should be given to nature education among the key residents, particularly the younger generation.

The Spoonbill Puzzle

The following is meant to be pointed rather than facetious.

> WANTED: One good life history; must be thorough. Would prefer special attention to Florida environment. Address ROSEATE SPOONBILL, care of this magazine.

The Association has been giving special attention to the Spoonbill since our first Florida warden was hired in the spring of 1902, and although the numbers of this lovely bird have been increased in Florida, this increase has been at a standstill in recent years. And we do not know *why!*

Thirty-six years ago, Messrs. Bent and Job visited Alligator and Cuthbert lakes in southernmost Florida, the only Spoonbill colonies that remained—possibly in the

entire United States, although a few pairs may have been hidden away somewhere in Louisiana. Certainly, there were no other Spoonbills in Florida, and these remnants probably numbered less than 50 birds. And not all of these were nesting.

In the last few years Spoonbills have been observed at a great many locations south of Charlotte Harbor, but only a few of these places produce Spoonbills with any regularity. Established nesting colonies have been located in the southern part of this range. The interesting, and at the same time puzzling fact that confronts us is that we have been unable to locate a really sizable nesting group. We believe that the Spoonbill can be expected to nest in large numbers because we have such colonies in Texas, and reports that are given to us of the early days in Florida describe similar concentrations.

There are several outstanding factors that may be contributing to an abnormal or unusual nesting behavior on the part of the Spoonbill in Florida. The most obvious of these, and likewise the most readily controlled, is human interference. Another possibility, though admittedly a vague one at this time, is that the drainage of the Everglades has had a profound effect on the environment of the Spoonbill. We seem to know relatively little about the environmental requirements of this species. We have seen what drainage has done to such specialized birds as the Everglade Kite and Limpkin; is it not possible that the altered condition of the Everglades has had a more subtle effect upon the Spoonbill and a number of other bird species?

It has also been suggested that we may be entirely wrong in expecting the Spoonbill of Florida to exhibit a behavior that is altogether similar to that of the Spoonbill in Texas, for example. Certain differences, such as the selection of a nest-site, can be noted quite readily, and these result quite naturally from a fundamental difference in the ecology of the two habitats. Perhaps the long centuries have brought about important physiological differences between these two geographic groups of the same species. If we are to foster the increase of the Roseate Spoonbill in Florida, it may be necessary for us to study and understand problems of this nature.

While we are casting about for an explanation to the puzzle of the Spoonbill's unresponsiveness, our wardens, with the coöperation of Government agencies, are making a special effort to find nesting Spoonbills so that we may further guard against disaster from the human factor.

Keying up the Keys

In connection with our current program for protection of the Spoonbill and the Great White Heron, we have recently employed two new wardens in the Florida Keys, and inaugurated there a much-needed educational drive. During January, enthusiastic meetings were held in Key West and Tavernier and were addressed by Messrs. Sprunt and Allen of the Sanctuary Department, and Alden H. Hadley, lecturer for the Florida Audubon Society and the National Association. Mr. Hadley also spent three weeks in Key West, speaking on conservation in the public schools of that city. At one of his first talks in a Key West schoolroom, Mr. Hadley threw on the screen a picture of the Catbird. There was an immediate, if rather startling response. A boy in the back of the room took one look at the picture on the screen and announced, with some pride, "We have that bird here in Key West . . . . we know it well. I shot six of them last week!" The youngster didn't even know that he had done anything wrong, and his viewpoint is an illustration of the great need for work in that part of the country. Already several Junior Clubs have been formed and we earnestly hope that the residents of the keys, and the resident and migratory wild life of that unusually attractive section of our country, will soon be living on different terms than heretofore.

Outstanding in the move to introduce wild-life conservation to the keys have been Mr. and Mrs. Wallace Bryant Kirke, of Key West, and Judge E. R. Lowe, of Tavernier. These people were responsible for organizing public meetings and for pushing the work in many ways. The Audubon Association and all conservationists owe them a debt of gratitude.

Our new wardens in the keys are Edward M. Moore, formerly of Bull's Island, S. C., who is stationed at Key West and operates

Roseate Spoonbill Photo by J. J. Carroll

in the Lower Key group; and Claude F. Lowe, of Tavernier, who patrols Florida Bay and the Upper Keys. Reports on the activities of these new men will be given in subsequent issues of BIRD-LORE.

Feeding Grounds and Precipitation

On the southwest coast of Florida, our three-man patrol has had an energetic winter. This patrol is now in charge of Warden W. A. Hart, who made such a fine record in the Lake Washington-Upper St. John's River country. With the able assistance of Wardens Reimann and Wirebaugh, Hart has covered many hundreds of miles in the last few months, in a determined effort to keep track of wading-bird concentrations. To use Hart's own words, "We took the big boat upstream as far as she would go, ran the speedboat still farther, till she scraped bottom, poled the skiff as long as there was any water, and then got out and walked!" As a result, we have had a more accurate series of reports on the distribution and movements of the Ibises, Herons, and Egrets of southern Florida than ever before. The actual monthly reports, with elaborate and detailed maps, have been carefully prepared by Warden Edward J. Reimann.

Unfortunately, this efficient force can do nothing about adverse weather conditions! The winter has been far too dry. This condition invariably affects feeding-grounds, and is already reflected in the behavior of the birds themselves. In the report of our wardens for January, they wrote, "It remains to be seen what effects this lower water-level will have on nesting birds. Snowy Egrets are gathering in small, compact flocks, an early gesture of the mating cycle, and the drab pink of the White Ibis's bill and legs is kindling slightly to a deeper hue with each succeeding day." According to the weather bureau reports, precipitation at the Everglades Station was slightly in excess of normal for November in that section, but definitely below normal in December and January. At the end of February the wardens reported, "The Everglades are dry and unfavorable to all birds. To make sure of the lack of water, we trekked some miles back through the cypress at Turner River slough on February 28. This country is as dry as the back of a sunburned mule!"

The expected large-scale movement of "rookery birds" to inland roosts in December did not materialize. In January there were 11 major roosts in southwest Florida, and Wood Ibises were nesting in 2 of these. However, 5 of these roosts were still located on the coast. By the end of February the roost at the head of the Shark River had assumed encouraging proportions. A careful estimate, based on observation of flyways from all points of the compass, gave a total of 70,000 birds of 10 species, 60,000 of these being White Ibis. Early March arrived, with no indication of nesting on the part of these birds, however, and American Egrets began to drop off in numbers, large flocks of them moving elsewhere.

As a result of these conditions, the 1938 nesting season in south Florida is one huge question mark.

Briefs

Two of our most important patrols went on the job as usual on the first of the year. Marvin Chandler, on the Kissimmee Prairie, predicts another successful nesting season. By the middle of February he already had 15 pairs of Caracaras nesting, 20 pairs of Florida Cranes, 21 pairs of Burrowing Owls and more than 15 pairs of Limpkins. In addition, he acts as guardian for nesting pairs of Bald Eagles, Marsh Hawks, Barred Owls, Red-shouldered Hawks, Ospreys, and several species of Herons and Ibises. In the Brownsville region in Texas, Warden H. C. Blanchard has prevented the illegal shooting of Hawks which winter in that area in large numbers. He has also extended special protection to water-fowl and numerous other species. As an educational influence, Warden Blanchard is performing a yeoman's task, and we have received encouraging reports on this phase of his activities from members of the Association who have recently visited Brownsville.

Oil-drilling on the coast of Texas, in relation to wild life, remains an outstanding problem. We are inclined to feel that the solution favorable to wild life, fisheries, clean beaches and similar interests that are currently threatened by the present oil boom, lies with the people of Texas. They must choose between the glitter of dollars in their School Fund today, and serious damage to natural resources that will give benefits for all time to come, if they are preserved. The Association is urging responsible organizations in Texas to undertake a state-wide campaign for the purpose of protecting these natural resources by immediate legislative action.—R. P. A.

Thousands Visit Central Park Bird Sanctuary

The educational value of a small sanctuary for song-birds is well illustrated once again by the visitors' roster at the Harlem Meer Bird Sanctuary in New York City. During the year 1937 the Department of Parks reports approximately 15,000 visitors, most of them school children, to this small area. It is well known that Central Park is an oasis of major importance to migrating birds passing through the New York City region. Marc Rich, of the Linnæan Society of New York, reports 138 species for the Park during 1937. Most of these birds, according to Mr. Rich, were also observed within the 8 acres of the sanctuary. The Department of Parks, Commissioner Robert Moses, and Captain Ronald Cheyne-Stout, in charge of the area, deserve proper credit for maintaining a successful sanctuary project in the heart of the world's largest city.

BOOK NEWS AND REVIEWS

BIRD STUDIES AT OLD CAPE MAY: AN ORNITHOLOGY OF COASTAL NEW JERSEY. By WITMER STONE. The Delaware Valley Ornithological Club at the Academy of Natural Sciences of Philadelphia, 1937. 2 vols., xiv + 941 pp. Illustrated. $6.00 ($6.50 postpaid).

BIRDS OF THE CONNECTICUT VALLEY IN MASSACHUSETTS. By A. C. BAGG and S. A. ELIOT, JR. The Hampshire Bookshop, Northampton, Mass., 1937. lxxiv + [20] + 813 pp. Illustrated. $8.50.

In his *Bird Studies*, Dr. Stone deliberately avoids "a mere tabulation of scientific data" and endeavors to present a readable account of wild bird-life in southern New Jersey, the occurrence there of the various species, and the picture of their activities in the local environment. At the same time, the D. V. O. C. has sought to provide a fitting receptacle for the life-work of its most famous and most beloved member. The result is a series of charming essays in which most of the species are illustrated by line drawings. The two green-bound quarto volumes also contain 240 excellent photographs, monthly lists, fascinating analyses of local migration, two color plates by Earl Poole, and an index. The studies are written much in the fashion with which Mr. Forbush handled "Haunts and Habits" in his epic *Birds of Massachusetts*.

Messrs. Bagg and Eliot, on the other hand, are deeply interested in the sport of 'breaking' records, in the fluctuations of arrival dates and in the exciting game of compiling as large a year's list as possible. Forewarned that this book is dedicated "less to those who read only for their own amusement than to those who read only to discover errors," many readers will, I believe, find it wordy and dull. For what is meant to be a monument to the exciting migration-watching currently flowering in Massachusetts turns out to be an overwhelming collection of faunal records for a much vaster area. Most of the book is an elaboration of two sections in Forbush: "Distribution in New England" to which the authors usually add New York, and "Season in Massachusetts," here of course changed to the Valley. About two pages per species are given over to this material, and separate dates are sometimes listed for as many as twenty townships. In the introduction, historical local bird-study is discussed, problems of field identification are excellently analyzed, and the use of the Valley as a migration highway is aptly described. Seasonal lists are given, five fall migrations are tabulated, and an index is added.

While Dr. Stone pointedly does not pretend adequately to cover the northern parts of New Jersey, he has, nevertheless, given us an up-to-date, much-needed faunal list for his state. This last-minute idea has made for a few misstatements of the breeding status of Canadian Zone species and for occasional vagueness about other birds outside of the coastal strip and Cape May. The primary object in the preparation of *Bird Studies* has been, however, to furnish for the purposes of future comparison, as accurate a picture as possible of the bird-life of Cape May during the decade 1920–30. On the quantitative side this is presented by excellent counts of bird-roosts and by the careful data of C. A. Urner on Ducks and shorebirds. There are no breeding-bird censuses on the acreage basis, few hourly counts, and little in the way of species censuses.

Mr. Eliot's knowledge of the status of birds in the Northeast can probably be equaled by that of few other men. It is a matter of great regret that in this book he did not choose to condense and summarize his material before attempting to compare the distribution of birds in other areas with that of the Valley. To an ornithologist his dates will mean little because he usually fails to correlate them with meteorological phenomena and with ecological data. To the bird-lover and the migration-watcher they represent an amount of reading time incommensurate with the net information gained.

His suggestions for new names of certain birds will strike most readers as rather amusing, but there are two sides to this question.

Mr. Eliot offers some even more amazing suggestions: that local Red-shouldered Hawks winter in a very restricted part of North Carolina; that the Gnatcatcher's occurrence in New York and New England may be due to a small, undiscovered, isolated colony on the shore of Nova Scotia with a flight-line 250 miles across the ocean to Cape Ann; etc.

Neither of these books includes adequate vegetational maps; there are no detailed maps of breeding-bird distribution (which are always of particular interest for rare and colonial birds); and the bird-banding records of each area are either too limited (as at Cape May?) for separate treatment, or (as in the Valley?) regarded only in passing.

Every bird student, regardless of his proximity to or distance from Cape May, can regard Dr. Stone's grand book as an unusual bargain. Its ornithology and composition are on the same high level as the state books by Dr. Roberts and Mr. Forbush. It is written with a style that is ever graceful, never pedantic, better than Brewster and approaching Thoreau. The book is a beautiful one which can be picked up by any reader, opened at practically any place, and read with considerable interest. The descriptions of the amazing spectacle of the migration of Flickers, Robins, and Myrtle Warblers at Cape May are given with unusual restraint and are, perhaps, even understated. They should not be missed. Paradoxically enough, the book by Messrs. Bagg and Eliot will, in spite of its popular ambitions, be an important reference book for serious students of bird-distribution in the Northeast who are willing to wade into it and who are ready to overlook Mr. Eliot's occasional attempts to stretch his local list.—J. J. H.

BIRD BEHAVIOUR. By F. B. KIRKMAN. Thos. Nelson & Sons, New York. 232 pp. $3.00.

Bird Behaviour is the somewhat misleading title of a book "based chiefly on a detailed study of the Black-headed Gull." In spite of a number of striking deficiencies of fact and inconsistencies of theory, the book stands out as one of the very few extended studies of the life history and behavior of a single species now available in the English literature. Mr. Kirkman has compiled, from his observations during thirty years, a painstakingly detailed account of the activities, individual and social, of this European relative of our Laughing Gull. In addition to simple observation, the author has carried out a series of experiments designed to throw light on the mental capacity of the bird. The book is illustrated with a fine series of 49 photographs.

There are several rather important deficiencies, particularly in the descriptions of courtship and sexual behavior. After thirty years of observations, the author does not know anything about the manner in which the birds pair. Generally, the birds arrive at the colony already paired, it is true, and the book is chiefly concerned with life in the colony, but it appears to this reviewer that the mechanism of pairing is, biologically, sufficiently important to deserve more adequate treatment in a study of social behavior than it has received in this book. We would at least like to know whether they become paired in their winter homes, or after arriving in the vicinity of the colony. The chapter on "Sex Reactions" appears to be less complete than the other chapters on reactions. Mr. Kirkman gives only the most casual description of copulation and its immediate antecedents, and no discussion of the possible significance of the unusual behavior of Gulls in general during copulation.

In analyzing the psychological aspects of the behavior of the Gulls, Mr. Kirkman, unfortunately, falls far below the standard set by his purely observational work. The fault seems to lie in the fact that the author is not guided by a comprehensive theoretical attitude toward the nature of the bird's mind, and the relation of its mentality to its behavior. Consequently, we find many inconsistencies of interpretation, such as the futile attempt to explain some reactions on a purely physiological basis (p. 106), and the ignoring of the mental factor in behavior (p. 184), on one hand, and, on the other, an elaborate attempt to evaluate the bird's mentality in purely psychological terms (Ch. IX–XII). It would appear fundamental that, for the sake of consistency, if for nothing else, a principle of psychological

interpretation, when formulated, should be applied to all phases of a bird's behavior, and not restricted to a small number of tests specifically directed toward the measurement of mental level.

The most serious criticism that can be made of the book is the author's apparent failure to have perceived the relation of some of the most important papers in his bibliography to his own work. Thus, although Lorenz' *Kumpan* paper is referred to, the author makes no effort to apply it to the general problem of the Gull's behavior, even when the facts which Mr. Kirkman leaves unexplained obviously call for some such interpretation (e.g., p. 116). Another example is the author's failure to apply the experiments of Watson, Lashley, Lorenz, and Howard, with all of which he is apparently familiar, to the problems treated in Chapter XII (The Triangle Tests).

There are several places where the reader would feel much more confident of Mr. Kirkman's interpretations if the birds were marked.

In spite of the deficiencies of the book, it should be read by everyone seriously interested in the study of birds, principally because it is a good example of the combination of the observational with the experimental method—a combination all too rare in ornithological studies.—D. S. L.

WARDENS OF THE WILD. By T. C. BRIDGES. Dodd, Mead & Co., New York. 271 pp. Illustrated. $2.50.

Here is a rare thing—a book about wild life that will strengthen your belief in the intelligence and vision of your fellow man! It is the story of some of the outstanding refuges for wild mammals and birds from the musk-ox sanctuary east of Great Slave Lake to the famed Kruger National Park in the low veldt of South Africa. Although the author did not personally visit all of the places of which he writes, he has described the establishment of the various sanctuaries with an enthusiasm that would make a convert of the most unsympathetic urbanite. His accounts of some of the large reserves in Africa, for example, leave one with the impression that the saneness with which the wild life in these vast areas is managed will insure an ample supply of these creatures for all time to come.

It is interesting to learn that the deer-farmer relationship in Pennsylvania has its counterpart in an elephant-farmer relationship in certain parts of Africa. Seemingly, the general policy towards such problems as natural predation, wild-life damage to crops, in the reserves of Africa, India, and Burma, has taken into account the new environmental situation created by the presence of man. There is ample evidence of a desire to preserve all forms of original wild life in such numbers as will be consistent with the changed conditions.

It is good to see sentiment given as the sole reason for setting up elaborate refuge and other protection facilities, without apology and without flimsy arguments under the label of economics. The yarn about 'Hubert,' the last of the Cape Province hippos, and the special legislation and special privileges accorded him, is one of the many encouraging items in this highly interesting book. Anecdotes are numerous and colorful, and even if wild-life sanctuaries are not a vital point in your catalogue of personal interests, you will find these pages good reading. There are the mistakes that seem to be inevitable in a compilation as ambitious as this one. Most flagrant error: the Audubon Association's Green Island Sanctuary in Texas is said to contain "more than two thousand pairs of the rare Green Herons. . . . The Island covers thirty-seven square miles." The *Reddish Egrets* on Green Island's thirty-seven *acres* are considered to be rare in spite of the fact that their numbers are substantially the same as Mr. Bridges has reported!—R. P. A.

NATURE SCIENCE SERIES. By CLYDE FISHER AND MARION LANGHAM. Noble & Noble Co., New York. Six books. 96 cents each.

Any teacher of the elementary grades will welcome this series, for it presents not only interestingly written factual materials on all phases of natural science, but also numerous study helps, programs of nature activities, and test questions. Profusely illustrated with full-page color-plates, marginal drawings, and miscellaneous drawings, these books have the distinctive feature of

combining literature with elementary science. Poems, nature myths, and legends have been incorporated to tell the stories of birds, insects, trees, flowers, marine life, and the preservation of our wild-life resources.

Each book is composed of two parts—the first for fall and winter, the second for spring and summer. A suitable vocabulary has been selected in presenting the material in a simple but none the less interesting style that is well within the comprehension of children in the first six grades.—T. P.

Recent Publications

Edited by S. C. HARRIOT

BAGG, AARON C. and SAMUEL A. ELIOT, JR. Birds of the Connecticut Valley in Massachusetts. Northampton, Mass.: The Hampshire Bookshop. $8.50.

BENNETT, LOGAN J. The Blue-winged Teal: Its Ecology and Management. Ames, Iowa: Collegiate Press, Inc. $1.50.

BOND, PHYLLIS. Watching Wild Life. New York: Longmans, Green & Co. $2.40.

BOULANGER, E. G. World Natural History. New York: Scribner. $3.00. (Juvenile.)

BRIDGES, T. C. Wardens of the Wild. New York: Dodd, Mead & Co. $2.50.

BROWN, H. P. Trees of Northeastern United States. Rev. ed. Boston: Christopher Publishing House. $3.00.

DITMARS, RAYMOND L. Fight to Live. New York: Stokes. $2.50.

FISHER, CLYDE and MARION L. LANGHAM. Nature Science Series. New York: Noble & Noble, Publishers, Inc. (Juvenile.)

Our Pets. 1st Grade $0.96
On the Farm. 2nd Grade 96
World of Nature. 3rd Grade $0.96
Ways of the Wild Folk. 4th Grade 96
Our Wonder World. 5th Grade 96
In Field and Garden. 6th Grade 96

FRY, WALTER P. and JOHN R. WHITE. Big Trees. Rev. ed. California: Stanford University Press. $1.50.

GEISER, SAMUEL W. Naturalists of the Frontier. Dallas: Southern Methodist University Press. $3.00.

GRANGE, WALLACE B. Feeding Wildlife in Winter. Washington, D. C.: Superintendent of Documents. 5 cts.

GREGG, H. R. Birds of Rocky Mountain National Park. Estes Park, Colorado: Rocky Mountain Nature Association. 55 cts.

HALLE, LOUIS J., JR. Birds Against Men. New York: Viking Press. $2.50.

HERRICK, FRANCIS H. Audubon, the Naturalist. Rev. one volume ed. New York: D. Appleton-Century Co. $6.00.

HOLDEN, RAYMOND. Natural History. (Poems.) New York: Henry Holt & Co. $2.00.

KATZ, DAVID. Animals and Men: Studies in Comparative Psychology. New York: Longmans, Green & Co. $4.00.

KELWAY, PHYLLIS. Swift Movement in nhe Trees. New York: Longmans, Green & Co. $2.50.

MCCAMPBELL, SAM C. Improve Your Range by Rodent Control. Fort Collins, Colorado: Colorado State College Circular 121-A. Free.

MORRIS, PERCY A. Nature Photography Around the Year. New York: D. Appleton-Century Co. $4.00.

PEATTIE, DONALD CULROSS. Prairie Grove. New York: Simon & Schuster. $2.50.

TAVERNER, P. A. Birds of Canada. Rev. ed. Philadelphia: David McKay Co. $4.00.

VERRILL, A. HYATT. Strange Birds and Their Stories. Boston: L. C. Page & Co. $2.50.

WEAVER, JOHN E. and FREDERIC C. CLEMENTS. Plant Ecology. 2nd ed. New York: McGraw-Hill. $5.00.

J. J. Carroll

It is our unhappy task to announce the death of J. J. Carroll, of Houston, Texas, in February. Those who know of his work will appreciate the extent to which wild-life conservation in Texas will suffer. In addition, the fortunate ones who were his personal acquaintances will realize that the loss of Mr. Carroll removes from among us not only one of wild life's most vigorous champions, but also a colorful and engaging figure of rare charm and force. In spite of the demands of a business career, Mr. Carroll turned to birds with an increasing enthusiasm during the last decade of his life. His remarkable photographs have often appeared in these pages, and in their perfection express the unique regard their author had for the outdoor world and its inhabitants.—R. P. A.

Night Club Operator Sentenced for Serving Illegal Wild Fowl

Washington, D. C., March 16. A Federal game-law violation case, involving people from California to New York City, and taking more than a year to complete, has been closed with a Leavenworth Federal penitentiary sentence for Jack Horner, proprietor of the famous Gingham Inn outside of Fort Worth, Texas, the U. S. Department of Agriculture announced today.

Horner, who operated a night club on Jacksboro Highway, catered to a wealthy and prominent clientele. People from all over the country ate wild Duck, Quail, Plover, Dove, and other wild birds at his inn. The birds were available in season and out. Horner purchased them from market gunners in great quantities over a period of years. In addition to serving them, he wholesaled his illegal product.

The U. S. Biological Survey officials say that Horner was the top man in an agency that destroyed many water-fowl and upland game-birds. It is estimated that the normal number of legitimate hunters from several counties would take less in one whole season than this man bootlegged annually.

The Horner case has attracted national interest since the Biological Survey began investigations, and Audubon Societies, sportsmen's clubs, and magazine and newspaper editors over the entire country have been urging prosecution of the case. Under the Migratory Bird Treaty Act the buyer of wild game also may be prosecuted.

A Letter

To the Editor of Bird-Lore:

For eight to ten years past the Government has, most unfortunately, been fostering a spirit of intolerance and destruction, directed against various wild creatures that may be regarded as pests. It now specifies the Crow. The Department of Agriculture issues a circular in which it calls attention to the fact that "Wintering flocks of Crows sometimes damage crops left in the field and also consume some of the feed farmers put in livestock lots," teaches how to build traps for catching Crows, pictures them, advertises their value, says that "two Oklahoma farmers caught 2344 Crows the last two winters in three cage traps designed by the Biological Survey"—and with the assistance of "a Survey representative,"—and adds, "The Survey recommends the use of the cage trap in fall, winter, and early spring only in localities where Crows congregate in large numbers and are doing damage."

Those who apologize for these activities will consider the foregoing note unfair in its implications; they will point to the concluding paragraph of the circular under criticism, which reads: ". . . the Crow has many good qualities and the use of traps and other control measures [?] should be resorted to only when it takes more than a fair share of the crops or feed . . . ," etc. The apologists will say that here is correction—here is prevention of any bad effect. But it is not so. The wrong thought, authoritatively uttered and given precedence, has its bad effect, beyond the reach of all corrective.

If Crows generally, or in particular places, have increased inordinately, it is fairly within the field of duty for the Biological Survey to make investigation and discover the cause, and, having discovered, to bend its efforts to correction. And if the Biological Survey will so act, all fair-minded men will give it their assent and support. It is, however, a very different matter to find the Survey, a presumedly impartial agency, joining a hue and cry that has been raised by selfish interests—sportsmen's organizations, that are notoriously unfair in such matters, and powder-makers, that no one expects to be fair. In their attitude to wild life the generality of men are barbarians. The Biological Survey includes a body of scientists, set apart for the very purpose of mitigation. It is disheartening, therefore, to find the Survey giving up its job, and, on no scientific grounds whatever, advising a continuation of the practices of barbarism.

—Bayard H. Christy.

WILDLIFE IS NOT FOR HUNTERS ALONE

By JACK VAN COEVERING

(The following extract from "Outdoor Affairs" in the *Detroit Free Press* of October 6, is reprinted by permission of the author)

Among us huntsmen, there is a rather prevalent notion that we are the real guardians of wildlife. We have a good reason for that belief. Because of our intense interest in our sport, we form clubs and associations. We discuss our troubles, and eventually force the making of laws which will perpetuate wildlife. We are not averse to making sacrifices. We demand shorter hunting seasons when needed and impose hunting and fishing licenses upon ourselves to support conservation.

Yet, despite our interest in wildlife and our concern for its perpetuation, we are inclined to have one failing: that is to regard game birds and game animals as the only wildlife worth considering. With that attitude goes the notion that all game birds and game animals exist for our direct benefit and enjoyment.

With the 1935 hunting season just around the corner, we believe it worthwhile to call attention to a statement by Judge H. Church Ford of the United States District Court at Lexington. Judge Ford was deciding against some Kentucky hunters who believed their rights infringed by the Federal ruling on mourning dove seasons. Said Judge Ford:

"Concern for the welfare and protection of our migratory birds is not by any means limited to those whose chief interest in them rests in the sport of hunting and killing them. The object of providing for their protection and preservation reaches far beyond the motive of the business and the sport of hunting."

If we should take all species of birds, mammals, fishes, amphibians and reptiles, and set them apart from each other as game and non-game, we would find that of the total of 2,368 species of the five groups, only 239 of them are regarded as game, says W. L. McAtee. In other words, only 10 per cent of our total wildlife species are of interest to the hunter. Yet the other 90 per cent are just as much entitled to consideration from the standpoint of general wildlife conservation.

It is the intensely specialized interest of us hunters in only a few species of wildlife that leads to conflict with the so-called "sentimentalists." Because we believe that they are "vermin" and interfere with the 10 per cent of the species which we want to catch or shoot at, we are inclined to oppose herons, beavers, coyotes, wolves, hawks, owls, snakes, foxes, skunks and a great many more. These animals are in themselves of intense interest to the non-hunters. After all, these other creatures have a right to life, liberty and the pursuit of happiness.

We huntsmen who go afield on the fifteenth of October are really enjoying a special privilege. That mechanic and clerk, shopkeeper and doctor, truck driver and foreman should all be able to hunt was quite unheard of until the great American Experiment began. It has worked quite well for almost two centuries, but the years of testing are ahead.

With the necessary development of the new technology of crop-wise management of game will come an inevitable rise in the cost of hunting and a tendency toward concentration and exclusiveness such as has already occurred largely in the sport of duck hunting. This development is inevitable and arises from the encroachments of civilization and the increased demand for hunting. Whether we shall be able to preserve the great American ideal of hunting for everybody who desires it, will depend upon the foresight and broadmindedness, not only of us, who call ourselves huntsmen, but also upon the public concern in maintaining the institution of public hunting which has been a feature of our democracy.

That is why we suggest that we hunters tread circumspectly in our attitude toward wildlife. If we narrowly insist that we are interested only in 10 per cent of all species, we are bound to alienate the great non-hunting public. We cannot afford to alienate that. The time may come when we huntsmen will need all the public support we can get to preserve our American heritage: hunting for everybody who desires it.

Conservation

By JACK SPEIDEN, Benson, Ariz.

We have heard much lately, correctly and incorrectly (many confuse it with the AAA) about the Soil Conservation Service. The following happens to be first-hand information, because I have had a good deal to do with them for a year and a half. Briefly, my experience has been this:

Members of their staff from Safford, map-makers, engineers, soil and erosion men, forage men, made a thorough survey and examination of this range. They then prepared a list of work to be done which was considered—along with more moderate grazing—necessary to bring the range to its highest producing capacity. This included the building of stock tanks, the better to distribute grazing, fences for the same purpose, the protection of areas already severely gullied, the treatment of washes—all measures with the ultimate aim of lessening run-off of water and removal of top-soil. These are the two most vital factors in the growing of grass and the better browses which are, after all, what the cattleman actually produces. Through them, and them alone, he raises and markets his cattle.

They offered to do all these things on this range, provided:

1. I furnish certain materials.
2. I agree to run not more than a specified number of cattle for a period of five years.

There are no other strings. They did not propose to run this ranch, nor are they doing so in any sense.

In the months since I signed the Coöperative Agreement, quite a lot of work has been done and, for the most part, well done. Complete frankness, however, compels the statement that its progress has been slow, and the cost in terms of public funds at times much greater than there is any excuse for. In large measure the inefficiency has been due to the mal-functioning of the CCC outfit that does the work. Its setup is a difficult one, and liaison between it and the S. C. S. has not been good. For a while it looked as if this range was being used principally as a nice, large picnic-ground. I stood it as long as I could, then called the attention of the authorities in Safford to the situation. The result was a notable increase in continuity and intelligence of direction of the work, and it is going faster. They still have room for a good deal of improvement, but that already made in their methods leads me to believe that my experience with them in the beginning does not have to be an eternal necessity of things, anywhere. After all, this is a very new organization, and even old ones never function 100 per cent. And of the Soil Conservation Service proper, it must be said that one cannot see much of the heads here in Arizona without getting the strong impression that they regard their work not as a livelihood, but as a cause.

This fact is not surprising, for their aims and objectives are both constructive and vital to our national well-being. They are here to stay. I am glad I signed with them and that many others have done and are doing likewise. It is gratifying to think that—instead of sitting back, entrusting our futures to rain, luck, or a beneficent Providence, and steadfastly resisting everything that does not comport 100 per cent with our established thought, usage, and political belief—we are doing our part, small though it may be when the whole is considered, toward increasing the true long-term productive capacity of the range country; that we are benefiting not only ourselves but our neighbors in the same watershed, as well as those who come after us.

A Correction

Stanley G. Jewett, Regional Biologist, U. S. Biological Survey, has sent to BIRD-LORE's office a photograph of some of the Geese struck by lightning as reported in Volume Thirty-eight, page 472 of BIRD-LORE. As Mr. Jewett reports, these were White-fronted Geese and not Canada Geese. —W. V.

IN APRIL

Learn a Bird a Week

By ROGER T. PETERSON

BLUE JAY (*Cyanocitta cristata*).

The only *blue-backed*, white-breasted bird in North America with a *conspicuous crest*. (Kingfisher is blue-gray, not *bright* blue.) Larger than a Robin. The *Bluebird* is much smaller, hardly larger than a Sparrow, with a *rusty* breast. *Range:* Eastern North America east of the Rockies and north to Newfoundland, Quebec, and southern Alberta. Subspecies include Northern, Florida, and Semple's Blue Jays.

FLORIDA JAY (*Aphelocoma coerulescens*).

Resembles the Blue Jay but more slender and *without a crest*. Light tan patch on back. The wings and tail are *uniformly blue* without black and white markings as in the Blue Jay. This species, which so closely resembles the California Jay, is confined to the Florida Peninsula where it is found locally in scrub-oak and sand-pine areas.

CRESTED JAY (*Cyanocitta stelleri*).

A big, husky Jay, considerably larger than a Robin. The only western Jay with a crest; keeps to coniferous woodlands. (California Jay and subspecies have no crests and prefer oaks and scrub.) The rich dark blue of the bird's body deepens into black on the head and foreparts. *Range:* Western North America; in the mountains from Mexico to British Columbia and on the humid coast from Monterey County, California, to Alaska. Subspecies include Steller's, Queen Charlotte, Coast, Blue-fronted, Black-headed, and Long-crested Jays.

GREEN JAY (*Xanthoura luxuosa*).

A bright *green* Jay, bluish green above, yellowish green below, with a jet-black throat-patch. It is the only *bright* green bird of Robin- or Jay-like proportions in the United States. (Young male Orchard Oriole has black throat-patch but is *dull yellowish olive*.) *Range:* In the United States only in the lower Rio Grande Valley, as far north as Laredo, Texas.

Junior Audubon Club Page

Marco Prefers New York to Florida

By **Nancy Woodbridge**

WILL Marco leave his winter home? "Who is Marco?" you ask. Marco is a Hermit Thrush.

In New York City, one cold day in October, 1935, a postman picked up a half-frozen bird from the sidewalk and took him into a near-by florist shop. This was a fine home for Marco, as he was named, amid the leaves and flowers. Here he enjoyed the mealworms and water the florist fed him.

The next spring Marco flew away through an open transom, leaving his home in the city for the deep woods of New England or Canada.

The winter of 1936-37 passed with no sign of Marco. Last October, however, on a chilly day, a Thrush appeared in front of the same shop. The florist took him inside. Surely it must be Marco! Two years before he had been very shy upon his arrival, but this time he fed willingly from the florist's hand, without coaxing.

Marco's recent newspaper publicity has made him a famous bird. People have come to the florist's shop from many miles away. But Marco seems restless, now. Will he fly north, or is it his frequent admirers who make him restless? We shall have to tell you in our next issue.

This spring, a small aluminum band has been placed on the leg of this Hermit Thrush. It is the band of the U. S. Biological Survey, which studies the travels or migration of the birds.

If Marco flies away, where will he next be seen? Will he choose to spend another winter in New York?

April and May Meetings

Spring Migration.—Marco was one of millions of birds that followed the Atlantic coast southward last fall. The Atlantic and Pacific coasts and the Mississippi Valley are three of the leading flyways. There are good supplies of water and wooded areas along these routes, where the birds may rest. *The Migration of North American Birds* has maps showing the routes and distribution of the birds during migration, and tells some of the 'whys.' This Circular No. 363 may be secured from the U. S. Department of Agriculture at Washington, D. C., for ten cents.

If you do not know more than twenty-five birds, now is the time to learn many more. The leafless trees make the birds easily visible. Beginners will be surprised to see their lists grow. Lists! Yes, many people who are interested in birds play two games. They keep a 'life list' of all the birds seen during their life and a 'year's list' with the names of the birds seen from January 1 to December 31 each year. What Junior Audubon Club mem-

ber will have the largest list this year? Games like these are fun, and keep up keen competition.

A Life History. Birds and other animals struggle hard to keep their kind alive. Their lives are full of adventure. Try to follow the life of one nesting pair of birds. Keep note of the date the birds arrive; the date they start building their nest; when and how many eggs are laid; how long before they hatch; what the young are fed.

But keep this in mind: When a bird's nest is discovered, do not unduly disturb it. Watch it from a hiding-place near-by or with a good pair of field-glasses.

Junior Audubon Club Essays must be in New York by April 15. Don't forget to include your name, address, age, grade, and the signature of your Junior Club leader.

Bird-Houses. These should be built to suit the inhabitants. The new leaflet about the House Wren gives plans and diagrams of how to build a simple house of tarred paper. A special leaflet on *Bird-Houses* by Roger T. Peterson may be purchased through our Service Department for five cents.

There are very simple styles of houses that suit most birds. Know what bird you want to attract to your home and remember the bird's size. A hole 1 inch in diameter is large enough for a Wren. Flickers will need a very much larger and deeper house with a hole about 3 inches in diameter. Those houses that are clean will rent most quickly. All houses should be made with hinged backs or detachable bottoms.

News of Junior Audubon Clubs

Club secretaries, get busy. Let us know what your Club is doing.

What are the N. Y. T.'s? There are two divisions of the Junior Audubon Clubs in Pomeroy, Iowa, —the Goldfinches and the older group who have chosen, instead of a name, the secret letters N. Y. T.

Boy Scout Troop 25; Far Rockaway, N. Y., is to be congratulated for its fine conservation display held recently which showed by models the evils resulting from needless destruction of our natural resources. The troop has busily constructed 15 bird-houses and 30 feeding stations this winter. In January a list of thirty-one birds was reported on one day's trip, a fine list for January on Long Island.

The Junior Audubon Club of the Air is now at 10.45-11 A. M. over station KEHE, Los Angeles, Calif.

I N M A Y

Learn a Bird a Week

By ROGER T. PETERSON

COOT (*Fulica americana*).

A *slaty gray*, Duck-like bird, blackest on the head, recognized readily by its stout *white bill*. On the water it shows a whitish patch beneath its tail. When rising the long legs spatter on the water and a conspicuous white line shows on the rear edge of the wing. *Range:* North America from coast to coast, north to New Brunswick, southern Quebec, central Saskatchewan and southeastern Alaska.

FLORIDA GALLINULE (*Gallinula chloropus*).

A slaty gray, Duck-like bird with a conspicuous *red bill*. In appearance and habits much like the Coot but a bit smaller and with a smaller head. Both birds dab about while feeding and pump the neck back and forth when swimming. Even more of a marsh-lover than the Coot. *Range:* Fresh-water marshes of North America from coast to coast, north to Vermont, southern Ontario and Minnesota in the East and to central California and Arizona in the West.

PURPLE GALLINULE (*Ionornis martinica*).

Much more brightly colored than the Florida Gallinule, best separated from that species by the *blue-purple* underparts, the *light blue* shield on the forehead, and the *bright yellow* legs (Florida Gallinule, greenish legs). The notes of Gallinules in the marsh are often quite hen-like. *Range:* Fresh-water swamps of coast belt from South Carolina and Gulf States south to Argentina. Wanders northward occasionally.

BARRED OWL (*Strix varia*).

In the East, the common *large* earless Owl of the woodlands. The large *brown* eyes, set in a round, puffy head, and the manner in which the bird is marked (barred *crosswise* on the breast and streaked *lengthwise* on the belly) identify it. The call usually consists of eight hoots in two groups of four, *hoo-hoo-hoo-hoo . . . hoo-hoo-hoo-hooah*. *Range:* North America, east of the Rockies, north to Newfoundland, northern Ontario, and Saskatchewan. Subspecies include Northern, Florida, and Texas Barred Owls.

SPOTTED OWL (*Strix occidentalis*).

A rare western *earless* Owl of the deep woodlands. The *hornless* head, *dark* eyes instead of yellow, and the heavier barring of the breast distinguish this species from the Great Horned. *Range:* Western North America, north to Colorado and southern British Columbia. Subspecies include California, Northern, and Mexican Spotted Owls.

BIRD-LORE'S SECOND BREEDING-BIRD CENSUS

Edited by Joseph J. Hickey

On their many Christmas Censuses, readers of BIRD-LORE have generally attempted to cover those areas containing the widest number of habitats yielding the richest and largest possible single day's list of birds in a 15-mile circle. The Breeding-Bird Census is cut from such a radically different pattern that its purposes should be re-emphasized. Our intention is to offer the pages of BIRD-LORE to those bird clubs and students who would like to publish careful counts of breeding birds in the interesting habitats of their local regions. It is our hope that much data on why the resultant population densities vary will gradually be accumulated. The habitats should be ones that are easily recognized, preferably simple, and, above all, clearly described. No special merit lies in the reports of unusually high densities or of very rare birds. Indeed, the smallest population reported in 1937, by C. A. Urner on a "new fill on salt marsh," proved to be one of the most interesting. BIRD-LORE has again depended for advice and criticism on a number of veteran census-takers (J. W. Aldrich, L. E. Hicks and A. B. Williams). The following regulations will undoubtedly lend these censuses a uniformity inviting to the interested reader and will, over a period of years, make them extremely valuable to the field ornithologist and the conservationist.

SELECTION OF AREAS. At least one-half the value of each count will lie in the care with which the study-tract is chosen. Because few censuses that show annual fluctuations, not directly caused by plant succession or by changes due to man, have ever been taken, habitats that are mature and stabilized in growth are most desired. Censuses from bogs, original prairie, virgin timber, and other rare, primitive types are of special interest. Habitats typical of large regions are also wanted. Because farms, orchards, and bird sanctuaries were censused for so many years for the U. S. Biological Survey, BIRD-LORE will include only repeated censuses of these complex types, reports of which were published last year. No additional censuses will be accepted from areas containing more than two habitats. *It is highly preferable that the size of the study area be restricted in order to preserve the picture of a single uniform environmental type.* Censuses should be taken on contiguous tracts of known acreage ranging from 15 to 100 acres. Decisions as to the best size one should census can be based on (1) the extent of uniform habitat available; (2) the man power and time obtainable for observation; (3) the observational difficulties presented by the density of cover. Twenty-five acres of heavy forest is quite as much as the average beginner can census alone on week-ends throughout the season. *Counts ought to be made as far as possible only where they may be repeated annually*, and except in highly inaccessible regions, *observers are requested not to take censuses unless they feel it is likely that they may continue to repeat them.* Observers desiring to census rare habitats of less than fifteen acres should consult the census editor before initiating such field work.

MANNER OF COUNTING. During the breeding season the bird population of any given habitat may be said to include five roughly divided classes: (1) birds nesting and residing entirely within the area; (2) unmated birds defending territories inside the tract; (3) birds nesting in the area and feeding outside of it; (4) birds nesting outside the area but visiting it for food or water; (5) wandering birds which have not yet nested or may already have done so. Although these classes intergrade with one another, the ideal portrait of an avian community would seek to separate them. Such an ideal can scarcely be achieved in the limited time many enumerators have in the field. This is especially true regarding Group 2, and observers finding singing males continuously occupying fixed territories may report these as pairs along with those birds which are seen carrying nesting material or food, or for which nests are found. Counts should be conducted by marking each bird seen on a map of the study-tract. The tracts should be paced off (or measured) in April

into subdivisions of 50 x 50 yards or 69.5 x 69.5 yards (1 acre) or into smaller parcels. By using one mimeographed map for each species, the breeding population can then be readily broken down into pairs on territories, visiting birds, Groups 1 and 2, 3, 4, and 5. Mapping territories is extremely useful where 'island effects' occur and where it is necessary to learn the extent to which some species nesting inside the tract actually feed outside it. In long, narrow tracts this method is of even greater importance in postulating accurate densities. For the more extensively ranging birds (Jays, Woodpeckers), it is best to find the actual nests as early in the season as possible.

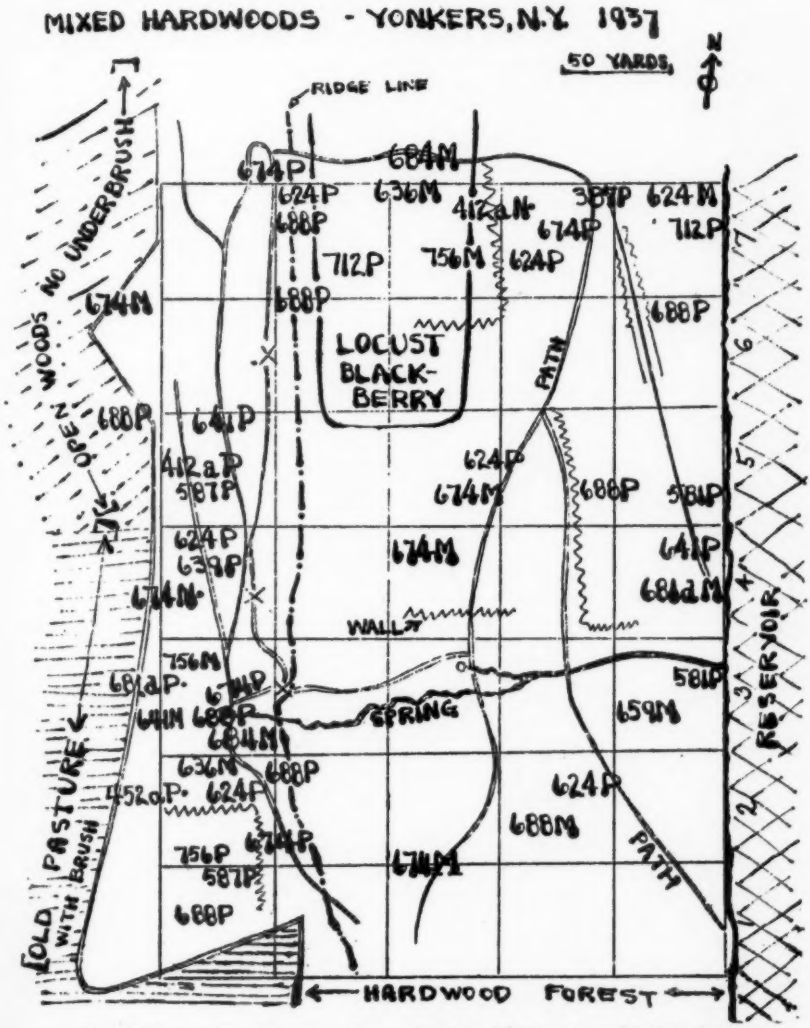
TIME OF CENSUS. The dates on which counts are to be taken obviously vary according to habitat and according to geography. In New Jersey, for instance, one might find eggs of the Great Horned Owl hatching in February and those of Goldfinches hatching in September. Accuracy and thoroughness thus lie completely in the discretion of the enumerator. *At least* five different counts should be taken. While the most productive days will be those when the majority of birds are building their nests or feeding their young, which have not yet flown, one should remember that the amount of time spent in the field is as important as the number of days one visits the areas. Cruises over a tract after 7 A.M. will in some habitats show but a 50 to 75 per cent efficiency in recording certain species. Where necessary, two night visits should be used to check for Owls, Woodcock, and Whip-poor-wills.

REPORTS. The model census which follows is a purely synthetic one which has been carefully designed to include the more important data on factors perceptibly influencing the character and density of bird populations. *Each census-taker should follow the exact form*, report all birds in their present A. O. U. order, and, wherever possible, endeavor to give the same kind of information. All censuses should follow the same use of symbols as in 1937. P = pair; M = male, generally singing on fixed territory and continuously observed throughout the season; N = nest; Y = a pair seen feeding young; UM = unmated male. These figures should be used to represent the classified basis for the number of pairs of each species . . . as readers will be expected to add them up in order to learn the exact numbers of adults of a given species. Parentheses may be used to indicate subtotals. Thus: "Fish Crow, 2P, 4N, 4Y" = 10 pairs; "E. Robin, 2P (4N), 4Y" = 6 pairs of Robins, 2 of which had second nests.

WEATHER. Generalities on three seasons are wanted. Such information can often be obtained from the nearest U. S. Weather Bureau. If this station is not meteorologically comparable to the study area, observers should refrain from reporting the weather on the basis of their own casual impressions. Further inquiry from the Weather Bureau may disclose the existence of many obscure near-by recording stations which coöperate with the Government. [Interesting reading on this subject will be found in S. C. Kendeigh, 1934, *Ecological Monographs*, iv, 299–417.]

MAPS. Each census should be accompanied by one or more maps, 10 x 8 inches, in black ink showing boundaries of the study area, adjoining environment, scale, nests, centers of territories, vegetational blocks, direction of north, and enough landmarks so that the tract may be readily found by some other person wishing to census it in the future. The number given each species on the map should be preferably its A. O. U. number. When high densities render this somewhat cumbersome, the observer may indicate in his report the special numbers used for each species on the map. Symbols (P, N, Y, etc.) should also be added to each number. Photographs illustrating habitats may be included in the reports since the reproduction of some of these will be effected when the censuses are published.

UPLAND OAK-HICKORY FOREST. Forest crown somewhat open with a substratum of shrubs averaging 8 feet in height and covering 40 per cent of the tract; typical woodland of southern Illinois; trees average about 50 feet in height and about 1 foot DBH [diameter breast high]; 70 per cent oak, 30 per cent beech; about 2 dead trees per acre; no interference by man for at least 20 years; once used as a cornfield. **Size:** About 25 acres (400 x 300 yards, paced). **Location:** Naghuna, Ills. Tract bounded on all sides by similar forest, except for 45 yards of pasture. **Topography:** Steep, rolling hills, elevation 150 to 200 feet; numerous outcrops; 2 running brooks. **Edge:** Provided by 45 yards of adjacent pasture; this attracted 3 pairs of birds. **Surveys:** Infrequent trips for 2 years; mapping completed April 9, 1938. **Coverage:** April 16, 23; May 8, 15, 22; June 4, 11, 18; July 10, 31.



Sketch Map indicating vegetative and topographic features, bird species and situation of nests

Hours varied from 5.30 A.M. to 10 P.M., totaled 53. **Weather:** Normal throughout period; winter previous open and unusually warm; temperature in 1937 breeding season about average but precipitation very heavy in June. **Census:** Red-bellied Woodpecker, 2P; E. Wood Pewee, 1Y; E. Blue Jay, 1N; Summer Tanager, 2N, 2Y. **Total,** 4 species, 8 pairs. **Density:** 32 pairs per 100 acres [in 1937—31 pairs]. Feeding outside tract: Turkey Vulture, 1N; Whip-poor-will, 1Y. Frequent visitors: Cooper's Hawk, 1M; Fish Crow, 1P; Tufted Titmouse, 1P; E. Bluebird, 1P; averaged 1.25 individuals per trip. Final density 65 adults per 100 acres.

EDGE. The edge effect represents that boundary or part of an area which permits the simultaneous access of a bird or other animal to two or more environmental types.

It may occur inside the study-tract or on its boundaries. Many species appear to prefer to lay out their territories in such a manner as to include more than one environmental type. Hence the high densities reported from orchards, bird sanctuaries, and the like. Observers who report on two habitats, should measure the acreage of each and determine the length of edge between them. In some cases these observers may be able to calculate the edge effect by determining the respective densities of smaller samples of the two habitats. If these samples are not too close to the complex inter-vegetational zone in question, their densities will afford interesting comparison with the density found for the entire study-area.

TERRITORIAL MAPS. The census editor will be interested in receiving from enumerators any territory maps which they have worked out in connection with their counts and which they feel will merit comparison with maps of the same species in other regions. This supplementary data will be extremely valuable for its life-history and ecological aspects . . . and worthy of separate publication elsewhere at some later date.

BIBLIOGRAPHY. Those who do not know the A. O. U. numbers of their species can obtain the *Abridged Check List* by sending 50 cents to W. L. McAtee, 3200 22nd St., Arlington, Va. For other censuses, see BIRD-LORE, September–October, 1937; A. L. Williams' *Composition and Dynamics of a Beech-Maple Climax Community* (Cleveland Mus. Nat. Hist., 50 cents); D. Lack's excellent summary: "A Review of Bird Census Work and Bird Population Problems" (*The Ibis*, April, 1937); M. M. Nice's superb detailed discussions, *Studies in the Life History of the Song Sparrow* (Linnæan Society N. Y., Am. Mus. Nat. Hist., New York City, $1.50); A. A. Saunders' stimulating reconnaissances, *Ecology of the Birds of Quaker Run Valley* (N. Y. State Museum, Albany, N. Y., 50 cents). Shelford's *Naturalist's Guide to the Americas* (Williams & Wilkins) will help many to classify their habitats properly.

THIRD NORTH AMERICAN WILDLIFE CONFERENCE HELD IN BALTIMORE

Audubon Staff Takes Active Part

The Third North American Wildlife Conference, under the auspices of The American Wildlife Institute, was held in Baltimore, February 14–17, with hundreds of attendants from many parts of the United States, Mexico, and Canada. On the whole the meeting was notably harmonious, and many of those present considered that it was the best meeting of its kind in their memory.

Much of the reason for this satisfaction undoubtedly lay in the organization of the general sessions into a series of "panels," which consisted of four speakers who presented two or more sides of each subject of discussion. Each speaker had a strictly limited period in which to tell his story, and there was a conspicuous lack of circumlocution; discussion periods were likewise limited, though divergent points of view were allotted equal periods for comment.

Although some of those attending the meetings were heard to voice their disappointment at the virtual absence of consideration of non-game species, the consensus seemed to be that this Conference, more than any of its predecessors, had come to grips with fundamental wild-life problems, and their solutions, by considering ways of correcting overdrainage, pollution, mismanaged reclamation, overcropping of wild-life resources, and by studying scientifically the many technical difficulties confronting conservationists. Every Audubon Association member would, without question, have enjoyed the meetings and profited from them; it is to be hoped that, next year, many Audubon members will attend.

Five members of the staff attended the meetings, and Messrs. John H. Baker and William Vogt participated in two of the hottest debates, the former on 'The Hows and Whys of Annual Water-fowl Shooting,' and the latter on, 'What's Wrong with Mosquito Control?' Mr. Richard H. Pough spoke in the panel on, 'How Shall We Approach the Pollution Problem?'—W. V.

A TRUE STORY OF COMMERCIAL EGG TRAFFIC

We have reported, in these pages, the commercial traffic in eggs of wild birds that until recently was a regular business on the Kissimmee Prairie in Florida. The last two winters have witnessed remarkable increases on the part of some of the species that were subjected to this commercialization. In addition to the oral accounts of natives of that region, and the reports of our warden, Marvin Chandler, we have seen such mute evidence as spikes driven into the trunks of practically every cabbage palm on the prairie where Caracaras had nested. Last January further evidence was uncovered, so convincing that it actually attains the power of speech. This story is a revelation of the illicit traffic in birds' eggs that has threatened the very existence in Florida of such magnificent species as the Florida Crane, the Caracara, the Burrowing Owl, the Limpkin, and several others. It creates a dramatic setting for the appearance of Audubon Warden Chandler on the scene, and serves to emphasize the sore need for warden patrols such as that maintained by the Audubon Association on the Kissimmee.

Obviously, the commercial egg collector is in the business for gain. His object is expressed in one word—money. This means that ethics are frequently thrown overboard, and steps are taken for going about the business of collecting eggs on a really large scale. Such a collector took into his confidence, and on his payroll, one or two residents of the prairie country, who served as middlemen. His instructions to them said, in effect, "I will pay you 50 cents each for the eggs of certain local birds. Here is a list of the species. I would suggest that you not only collect these eggs yourselves but make a deal with cow-punchers, alligator hunters, froggers, and all others who will be in a position to gather large numbers of the eggs of these birds."

The middleman, in turn, lined up everyone on the prairie who was willing to collect eggs, and offered them 25 cents each for the eggs of the birds on his list. They brought the eggs to him daily, and having been supplied with an egg-blowing outfit, he prepared the collections, noted the necessary data in pencil on the shell of each egg, and stored them away in a safe place until the return of his employer.

The eggs in the accompanying photograph are part of a lot gathered for a certain collector who operated on the prairie as described above. They originally totaled 40 eggs, all neatly blown, inscribed with data, and packed away to await delivery. At length the collector arrived to claim the eggs. But there was a little matter of a bill for services rendered that remained unpaid. It totaled $250 (500 eggs!), and the middleman requested payment in full before turning over the final delivery. There was no trouble about it, however, as the collector paid the full amount by check. Still, the middleman was not wholly satisfied, and as he had business in Okeechobee the next day, he carried the check with him and presented it at the bank. There was an unpromising delay, and then the bank performed not only their rightful duty, but a great service to the cause of conservation. They refused to honor the check!

When the news reached the prairie, it didn't take very long for a delegation of cow-punchers and alligator hunters to get together and start for the collector's camp. A man who was in this mob told us that one of the cow-punchers carried a rope, with a special kind of loop at one end. Evidently the collector did some fast talking, for he was permitted to depart early the next morning. And the final delivery of eggs, 40 of them, remained in the cache. The bottom had dropped out of the market.

Shortly after these exciting events, the Audubon Association employed Marvin Chandler for the purpose of putting a stop, once and for all, to commercial egg-collecting on the Kissimmee. Chandler knew of the cache, but he was unable to prove that

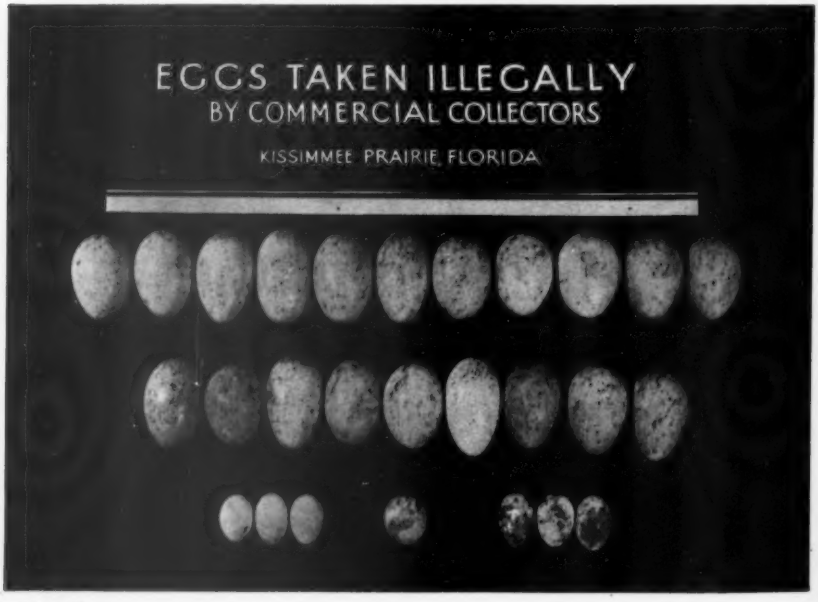
the erstwhile middleman had these eggs in his possession, for the simple reason that the location of the cache was unknown to him. Last January he planned a surprise attack. When Messrs. Sprunt and Allen of the Sanctuary Department were with him on the prairie, he enlisted their services in confronting the one-time agent and demanding to know the exact location of the cache. The poor fellow, not knowing what was in the wind, blurted out the entire story. Alexander Sprunt has described, in a recent report, what was found.

It seems he had hidden the eggs in a large lard-can, and tied it to an oak tree behind the old R—— store, which was used as a clearing-house for all the collecting done in the area. We went to that spot, and after beating about a dense palmetto thicket behind the store premises, actually found the can! It was attached to an oak tree with a wire. After photographing it *in situ*, the can was wrenched off, the rivets, holding the plate to which the handle had been attached, having to be pulled out. We then took the can out into better light and examined the contents. . . . It was full of boxes of eggs, put in loosely. The eggs were all dated in pencil, blown, and ready for delivery. Naturally, some of them were in very poor shape, and some were broken, but the majority were in good condition. There were 3 eggs of the American Egret, 3 of the Water-Turkey, 2 of the Chuck-will's-widow, 28 of the Florida Crane, and 4 eggs that were not identified. It was most interesting to realize that this can had been attached to the tree for several years, and Chandler had passed and repassed it many times, at a distance of hardly 50 yards. It was wonderfully hidden, and certainly would never have been found unless one knew exactly where to look.

How many hundreds of eggs that lard-can had held prior to the events described will never be known. We believe that the traffic was stopped just in time. At other places on the prairie there were probably other lard-cans or their equivalents, and if the trade in eggs had not been halted, it would unquestionably have proved fatal to some of the species involved. Our patrol continues, and so far as we are concerned, this account is historical. When you visit the Kissimmee, it is earnestly hoped that you will find time, in the midst of your enjoyment of that unique region, to remember Warden Marvin Chandler—and the check that bounced!—R. P. A.

THESE CRANES NEVER TRUMPETED!

The large eggs are those of the Florida Crane. At the bottom (l. to r.) American Egret, Red-shouldered Hawk, Anhinga



THE SEASON

CXX. October 15, 1937 to February 15, 1938

Boston Region.—The sharp weather contrasts which made the land-bird migration so notable in September continued into early November. All observers agreed in reporting that the countryside was constantly flooded with birds in unusual numbers. There were particularly marked waves on October 16 and 17, November 2, 7, and 10. On the whole, however, the birds affected were the commonest and most characteristic species of the period. Sparrows, Hermit Thrushes, Robins, Myrtle and Palm Warblers positively swarmed in October, and great flights of Grackles aroused astonished interest in early November. The White-crowned Sparrow was particularly scarce, however, and notable rarities were few. Of these a Lark Sparrow at Morris Island, Chatham, October 16 (Griscom, *et al.*) is worthy of mention, while a most unusual observation was furnished the next day by a party at sea, 10 miles east of Chatham, who watched an Orange-crowned Warbler coming in to the boat over the ocean, which finally lit on a cod-line within a foot or two of the faces of several observers.

From the middle of November to early January the weather was remarkably mild, without a single severe or sudden cold wave, and no snowfall worthy of mention. These conditions produced the most phenomenal variety of wintering species ever recorded in this region. The Christmas Censuses in the last issue of BIRD-LORE give eloquent testimony of the truth of this statement, but there is no point in reprinting here the long list of specialties found. Suffice it to say that the greater part of the variety of species was due to the number of birds present, the normal winter ranges of which are south to well south of our limits. A brief summary is appended of those groups or species worthy of special note.

Red-throated Loon: Phenomenal flight lasting over a month, with an average of 50 to 75 per trip; at least two to three times as numerous as the Common Loon. At least eight of the supposed Pacific Loons reported (Allen, Emilio, Griscom, *et al.*).

Holboell's Grebes: Unusually scarce. Horned Grebes were exceptionally late in arriving in numbers.

The Hawk-flight was relatively poor over Mt. Tom, and, as a group, these birds were noticeably scarce near the coast. There were very few Goshawks.

The flight of water-fowl was, on the whole, poor, with the rarer 'western' species in particularly small numbers. There was a marked increase in the reports of migrating Brant. More Ruddy Ducks were observed than in many years past, and the Ring-necked Duck was reported in larger flocks than ever before. A Lesser Snow Goose was recorded definitely on two occasions: Eastham, November 11 (Austin), and Fall River, November 27 (Clements). Probably due in large part to the mildness of the season was the large number of wintering water-fowl.

The storm of November 13 brought a good flight of Dovekies, with a few inland records. This species largely disappeared shortly after Christmas. Other Alcids have been reported as occasional stragglers only, but an Atlantic Murre off East Gloucester, February 6 (Juliet Richardson, *et al.*) is a great local rarity.

Kittiwakes have been practically unreported off Massachusetts, and the main southward flight must have been missed. The white-winged Gulls were very scarce until mid-January. Per contra, the number of wintering Ring-billed Gulls is quite exceptional. On November 7, 2 European Black-headed Gulls were found at their old stand at Newburyport (Tousey, *et al.*). The immature bird was not seen again, but the old adult, with salmon-pink breast, lingered until late December. In its shyness and unwillingness to associate with the Bona-

parte's Gulls, it so exactly resembled last year's bird as to arouse strong suspicion that it was exactly the same individual. On January 30 another (?) immature was found off Plum Island (Garrison and Martha Brewer). A Skua followed a steamer 30 miles off Nantucket for some time on January 2 (Pough).

The shore-birds continued their tendency to linger later than ever, with an exceptional number of winter records.

As regards land-birds, there was a marked invasion of Snowy Owls, but not a great flight-year like 1926. Other of the irregular winter visitants are absent or represented by stragglers only. Shrikes and Siskins have been particularly scarce. There have been fewer Evening Grosbeaks than for the past 22 years. The only exception is the Redpoll, which has been present in moderate numbers, in the interior of the state. A bird well seen by A. C. Bagg at Holyoke, on February 5, with other Redpolls, was, without reasonable doubt, an adult Hoary. Red-breasted Nuthatches have been remarkably abundant.

January was a rather cold month with 27 inches of snow in 22 days. A violent thaw and heavy rains removed it all in a few days, and preposterous mildness has lasted to date. While the usual decrease of birds is obvious, the majority of the species survived the conditions in January. Since the first of the new year no less than 129 species of birds have been found in eastern Massachusetts alone, and one individual has seen over 100 species—statistics without precedent in this state. Outstanding freaks are no less than 5 different Baltimore Orioles, and a Dickcissel is wintering at Plymouth, as usual consorting only with English Sparrows.—Ludlow Griscom, *Museum of Comparative Zoölogy, Cambridge, Mass.*

New York Region.—Only a few short cold snaps locally this winter, and ground mostly bare. The many less-hardy late lingerers showed a good percentage of winter survival, partly due to artificial feeding, and the large number of half-hardy birds present, particularly Blackbirds, wintered well. The tremendous Blackbird concentration at the fall roost on Kingsland, N. J., marshes (over 300,000 on October 31—Wolfarth, Lang, etc.) moved on with December cold, but the Raritan, N. J., arsenal roost held many thousands through the winter (Cant and others), as did a large roost recently discovered on Long Island (Cruickshank).

The kindness of the winter to bird-life is indicated by the second annual midwinter state-wide New Jersey census in which the active fieldmen of the state recorded 149 forms (plus 1 found later that probably wintered) and over 420,000 individuals (all reports not yet in), compared with 132 forms and about 170,000 individuals last year—this in spite of fewer individual field hours in 1938 than in 1937. But all New Jersey wintering birds did not show an increase over last year. Decreases were noted in Brant, Buffle-heads, Blue Jays, Tufted Titmice, Juncos, and Robins; increases most striking in Ducks, Red-backed Sandpipers, Crows, and Blackbirds, though many other species showed substantial gains.

Some evidence of southbound migration noted to January 29, almost meeting the very early February spring arrivals of several species as confirmed by Central Park records (Rich).

Reports from Mayer, Wilcox, Raynor, Sedwitz, Helmuth, Shainin, Jacobson, Fischer and others from Long Island indicate the late lingering of many birds in the fall, and a large and varied fall flight of land- and water-birds. Cory's Shearwaters, Pomarine and Parasitic Jaegers recorded to mid-November.

Janvrin and Sedwitz discovered a bird on January 9 at Point Lookout, L. I., which they identified, to their complete satisfaction, as a European Eared Grebe; seen again and photographed by them January 16.

Flight of Canadian Geese, over 1500, seen by Raynor at Manorville, November 30, heading west-southwest. The formerly rare Ducks—Gadwall, European Widgeon, and European Teal—are extending their range from Brookhaven, and Hempstead, L. I.; thus, 18 Gadwall, Patchogue, February 5 (Raynor and Wilcox); 1, World's Fair Grounds, February 10 (Fischer). All observers report more Ruddies. Harlequin Duck, Montauk Point, November 15 (Helmuth). King Eiders reached Montauk in numbers in November-December (Jacobson, Shainin, Helmuth, Raynor, Wilcox) but not New Jersey. Great flight of Red-breasted Mergan-

sers, Montauk, 9000, November 15 (Helmuth), and 2000 still there December 30 (Wilcox and Raynor).

Hawk enthusiasts in New Jersey, notably Edwards, Rustling, and Brown, watched rarities such as Goshawk, Golden Eagle, and Raven pass the state in the fall, visually forestalling the Hawk Mountain, Pa., watchers.

Wintering shore-birds up in New Jersey (12, probably 13, species, midwinter census) and more Long Island reports than formerly.

Kittiwake records numerous from Long Island, but few white Gulls. Several Dovekie records, largest number 50, Long Branch, N. J., December 15 (Seeley). Brünnich's Murre reported from Long Island by Helmuth and Jacobson; Razor-billed Auks from Long Island and New Jersey by Raynor, Wilcox, Sedwitz, the Hiatts, and Seeley.

Notable Snowy Owl flight, heaviest in years. Some came in after the hunting season and a few survived to February 15. Dozens of records are at hand, some inland, including 'flock' of 4 migrating, Port Chester (Mrs. Cook). Few Long-ears and Saw-whets.

Mayer reports Prairie Horned Larks wintering at Idlewild, L. I., and some midwinter New Jersey records. Fish Crow winter records increased; numbers, early February, Central Islip, and Bayside (Raynor and Fischer). Few Shrikes. Of Northern Finches, Redpoll records most numerous, scattered over the area from late October to mid-February. One White-winged Crossbill, Mountainside, N. J., November 14 (Eynon), and December 26 (Rebell). Red Crossbill, eastern Long Island, November 4 (Helmuth) and Atlantic Highlands, February 5 (Urner). Large fall flight Red-breasted Nuthatches with numbers wintering.

Samples of abnormal records: Mourning Warbler, Central Park, November 26 (Rees); Crested Flycatcher, Oradell, December 4 (Robinson); Northern Yellow-throat, wintered, Idlewild (Mayer).

In connection with the Scarlet Ibis record reported Ridgefield Lakes, Conn., September 5-6, by Ed. Sullivan, George W. North, Hamilton, Ont., reports one seen at Point Pelee, first by Dr. W. E. Saunders, September 13; present until October 1. Flying over, Mr. North saw it lacked the black tips to the primaries on one wing which affected the manner of flight; evidently an escape. He also reported Brown Pelican, Hamilton, August 28.—Charles A. Urner, *Elizabeth, N. J.*

Philadelphia Region.—Mild weather has prevailed throughout the winter. Snow has been noticeably absent. Creeks and ponds have, for the most part, been generally free of ice.

Probably the most noteworthy occurrence of the winter has been the Snowy Owl invasion. Records at hand, presumably all different birds, are as follows: Salem, N. J., November 25, 1 (Worth and Roland); Fort Mott, N. J., December 5, 1 (Keating); Brigantine, N. J., December 5, 1 (Walton and Haines); Brigantine, N. J., January 1, 1 (Lindauer); Beach Haven, N. J., January 9, 1 (Potter); Tuckerton, N. J., January 23, 1 (Schmid); Tinicum, Pa., January 8, 2 (T. and J. Rigby); Tinicum, Pa., February 1, 2 still present (Groskin). The Owls have met with the usual barrage of shot from thoughtless gunners. Five have been reported killed at Tinicum, Pa. Norman McDonald, who has given the concentration of Owls and other Raptores at this point considerable study, states that, without doubt, the birds are living on the great numbers of brown rats that live among the rocks forming the dyke around the marshes. It would seem only fair for bird students and sportsmen alike if state game commissions would instruct their wardens to prevent, as far as possible, the killing of these rare and useful Owls. A live Owl is a destroyer of harmful rodents and an object of special interest to bird students; a dead Owl serves no good purpose to anyone.

Owls other than the Snowy have been present in unusual numbers. Short-eared Owl: Fort Mott, N. J., November 7, 1 (Walton); Fish House, N. J., November 27, 9 (Corn); Brigantine, N. J., November 11, 16 (Hess); Tinicum, Pa., January 16, 16 (Goldstein); Stone Harbor, N. J., February 6, 1 (Foster). Long-eared Owl: Fish House, N. J., November 19, 1 (Corn); Princeton, N. J., January 9, 1 (Watson); Northern Chester County, Pa., January 2, 1; West Chester, Pa., February 6, 3 (Conway). Great Horned Owl: Salem, N. J., January 30, 1 (Schmid);

Colestown, N. J., February 15, 1 (Haines); West Chester, Pa., 1 shot by gunner (Conway); Cupola, Pa., February 8, 1 (Colwell). Barn Owl: Camden, N. J., October 1, old tree, cut down by workmen, contained 4 young Barn Owls unable to fly (Batezel); Holmes, Pa., old tree, cut down by workmen, contained 5 young Barn Owls unable to fly (Gillespie); records of 5 other adult Barn Owls have been received from other points.

Wild-fowl have been present in great numbers in favorable locations. The greatest concentration has been along the Delaware River above Chester, Pa. On January 2, V. A. Debes estimated 40,000 birds present. About two-thirds of these were Black Ducks and the others mostly Pintails. Four Whistling Swan, wintering in the same locality, have attracted much attention.

Other records of interest: Moselem Springs, Pa., November 12, American Egret (Shainin); Beesleys Point, N. J., February 6, Snow Goose, 1 among 200 Canada Geese (Watson); Fortesque, N. J., Snow Goose, 2500 (Street and others); Haddonfield, N. J., Coot wintered (Regensburg); Pemberton, N. J., early February, Golden Eagle, 1 killed (specimen examined by Highley); Crosswicks, N. J., mid-January, 1 killed (specimen examined by Street); Camden, N. J., January 11, Glaucous Gull (Potter); Cape May, N. J., January 2, Arkansas Kingbird and Red-headed Woodpecker (Schmid); Mt. Holly, N. J., Mockingbird wintered (Pumyea); Berks County, Pa., February 3, European Teal (Broun); North Wildwood, N. J., February 6, Redpoll, 9 (Foster and Watson); February 12, Purple Sandpiper among 2500 Red-backed Sandpipers (Choate and others); Collingswood, N. J., February 13, Lesser Yellow-legs, 7 (Potter); Barnegat City, N. J., December 19, Razor-billed Auk (F. M. Archer, Jr.); Hancocks Bridge, N. J., October 31, Gadwall (Edwards); West Chester, Pa., October 18, White-crowned Sparrow (Mrs. E. F. Cope); January 29, Ruby-crowned Kinglet (I. C. Roberts); Colestown, N. J., February 13, Redpoll (Walton); Woodstown, N. J., February 15, Crow-roost containing 32,000 birds (Potter); Mt. Holly, N. J., February 12, Crow-roost containing 30,000 birds (Pumyea).—JULIAN K. POTTER, *Collingswood, N. J.*

Washington (D. C.) Region.—The period from October, 1937, to January, 1938, in the Washington Region was one of comparatively mild weather. The only relatively cold spells occurred in early December and late January, but the minimum temperature was only 17° F.; and but one snowstorm of any consequence occurred during this period. Many persons remarked on the rather noticeable absence of birds at feeding stations in this general region, although the records made by field observers did not indicate any serious shortage of birds in the woods, fields, and thickets. The lack of snow may have been responsible for the absence of birds from artificial feeding-places. It will, however, be interesting to note the difference next winter if the weather should happen to be cold and stormy.

The mild weather of the present season probably had much to do with the late dates of many of the migratory species and with the wintering of certain birds that stay here only during open winters, or even rarely under any circumstances, such as the Purple Grackle, Chipping Sparrow, Phoebe, Hermit Thrush, and Pine Warbler. Cardinals were heard singing on the day after Christmas, and the Song Sparrow on January 27. Among the birds that remained late, the following may be worthy of special mention: Pectoral Sandpiper, November 5; Red-backed Sandpiper, November 21; Semipalmated Sandpiper, November 3; Laughing Gull, November 4; all seen at Four Mile Run, Va., by A. L. Curl; Black-bellied Plover, October 29, in East Potomac Park; Common Tern, October 16, at Fort Hunt on the Potomac River, below Washington; Tennessee Warbler, October 31, at Roaches Run Sanctuary, Va.; Hermit Thrush, December 12, at Chopawamsic, Va., by Mr. Curl; American Egret, October 25, at Four Mile Run, Va.; Little Blue Heron, October 1, at Roaches Run Sanctuary, Va.; Yellow-billed Cuckoo, October 19, and Nashville Warbler, October 25, both in the city of Washington; all reported by W. B. McIlwaine, Jr.; Henslow's Sparrow and Wood Pewee, October 25, at Point Lookout, Md., by J. C. Jones and F. H. May; and the Bobolink, October 10, near Fort Meade, Md., by Miss Phoebe Knappen.

Wintering birds include the Purple Grackle, which was reported by W. B. McIlwaine, Jr., on January 19 and 20, at Alexandria, Va.; the Phoebe, seen at Baynesville, January 10, by C. P. Preston; Chipping Sparrow, December 19, at St. Marys City, Md.; and the Pine Warbler, on the same date and at same locality, both by R. C. McClanahan and Miss Phoebe Knappen.

In addition to these rather unusual seasonal occurrences, observations on some other birds included several of considerable interest. The Forster's Tern was reported on October 5, in the vicinity of Hunting Creek, by W. B. McIlwaine, Jr., and a flock of 25 Black Vultures was noted by A. L. Curl between Cabin John, Md., and Great Falls on the Potomac River, on November 14. Others were seen near Fort Washington, on the Potomac River on December 19. A Short-eared Owl was seen at the Bolling Field airport, near Washington, on December 5, by Mr. Curl. The Double-crested Cormorant was observed at Little Hunting Creek, October 8, by W. B. McIlwaine, Jr.

While the Ducks frequenting the Potomac River during the present season are by no means as numerous as in days gone by, a considerable number of species has been reported during the period covered by this report. Probably the most interesting of all these is an adult male European Widgeon, which was observed by C. P. Preston, at Wakefield, Va., Washington's birthplace, south of the city of Washington, on January 23. A. L. Curl reported a male Shoveller at Roaches Run Sanctuary on January 1. Other Ducks reported by various observers are included in the following list: Mallard, Black Duck (probably both subspecies), Baldpate, Gadwall, Pintail, Ruddy Duck, Redhead, Canvas-back, Ring-necked Duck, Greater Scaup, Lesser Scaup, American Golden-eye, Buffle-head, Hooded Merganser, Red-breasted Merganser, and American Merganser.—HARRY C. OBERHOLSER, *U. S. Biological Survey.*

Pensacola (Florida) Region.—The first half of the double period was cold—a frost on October 24 was the earliest ever recorded, and there were several hard freezes late in November and early in December. Mild weather prevailed after January 1, with springlike temperatures after February 1. Subnormal rainfall since January 1 allowed upland ponds, full until that time, to dry up.

Possibly as a result of the early cold, Ducks have been more numerous—or at least less rare—than for several years past. The Lesser Scaup may be considered common again after three winters of decided rarity, though its numbers do not approach its tremendous abundance in this region of twenty or even ten years ago. Other species of interest are Buffle-head (rare) and Hooded Merganser, both first seen on December 5 and again several times since that date; and Canvas-back (rare) and Ring-neck, December 19. Buffle-heads, when they appear at all, are usually seen in 2's and 3's, but a flock of 30 of both sexes was found on an unfrequented part of Pensacola Bay on January 1. A flock of 12 Canvas-backs on December 19 was unusual, and a flock of 39 on December 26 (McClanahan and Wicke) was unprecedented.

Of smaller migrants, the Field Sparrow, first seen on October 29, and Purple Finch (rare) on November 24 (both reported from Century by Mrs. A. L. Whigham) were the earliest of these species ever noted locally. Other arrival dates of interest include: White-throated Sparrow (Mrs. Whigham) and Myrtle Warbler, October 17; House Wren, October 21 (Mrs. Whigham); Golden-crowned Kinglet and Blue-headed Vireo, October 24; Chipping Sparrow, October 28 (Mrs. Whigham); Herring and Ring-billed Gulls and Red-backed Sandpiper, October 31; Hermit Thrush, November 7; and Cedar Waxwing, December 1. The Brown Creeper, erratic in its movements this far south, has not appeared at all. The House Wren becomes increasingly scarce year by year, and almost all of the few seen are found in the city. Sparrows of several species, notably the White-throated, Savannah and Vesper, are not as abundant as usual, possibly because their feeding-grounds in the regions immediately to the northward have been largely free from snow this winter.

Of departing fall migrants, the Rough-winged Swallow, seen on October 24, and the Little Blue Heron, seen on October 30, were the latest ever recorded. Mrs. Whigham reports: Red-eyed Vireo, last seen on October 18; Redstart, October 20; Chimney Swift, October 22; Ruby-throated Hum-

mingbird, October 24; Indigo Bunting, October 29; and Wood Pewee, October 30. Other departure dates of interest are: Wood Thrush, October 24; Black-throated Green Warbler, October 31; and Osprey, Lesser Yellow-legs, and Barn Swallow (very late), November 7. A single Oven-bird, seen on November 7, may have been wintering, for this is far later than the usual date of departure. Other species, unusual in winter, are: Black and White Warbler, seen on November 7 and December 26; and Spotted Sandpiper and White-eyed Vireo, seen on December 26. A Duck Hawk on January 16 was one of the few I have ever seen.

An item of outstanding interest is the presence all winter of a Dickcissel at Mrs. Whigham's station at Century. The bird arrived late in October in the rather nondescript plumage of the first winter and has fed regularly ever since with a group of White-throats. About the middle of January it began to show the black 'bib' of the adult male and, when I saw it on January 22, was readily recognizable. At the close of the period, it is apparently in full nuptial plumage. The only other Dickcissel I have ever seen was a mid-spring migrant.

Spring migration started, as usual, before the close of the period. The first Purple Martins were reported on February 11 (F. Bray), and the first Osprey appeared at last year's nest on February 15. The Osprey, a common summer resident, does not (contrary to popular belief) winter on this part of the Gulf coast. It is occasionally seen in winter at points about 100 miles both east and west of Pensacola, but during my 22 years' residence I have seen it only twice in the months of December and January.—Francis M. Weston, *Bldg. 604, Naval Air Station, Pensacola, Fla.*

Dayton (Ohio) Region.—Consistently low temperatures, with approximately a normal amount of precipitation, characterized the late fall and early winter in the Ohio region. In mid-December there was a marked change toward warmer, drier weather which culminated in several unseasonably warm days between February 1 and 15, during which maximal temperatures of from 60° to 70° F. were recorded. With an abundance of data from more than 30 observers, well distributed over the state, it is quite evident that bird populations reacted to the warm weather of recent weeks. Looking back to the late fall and early winter period, however, there is an utter lack of correlation. Many fall migrants tarried beyond their usual time, and winter lists included a number of species which usually retire farther to the south. A large supply of such staple winter foods as beechnuts, dogwood berries, hackberries, and wild grapes may help to explain the presence of a number of the woodland birds, but the water-fowl are not so easily accounted for. The following records are grouped into three classes: late fall migrants, winter-birds (December 1–February 1), and early spring migrants. Due to the large amount of material received, only a few outstanding examples can be included in each group.

Late fall migrants: Holboell's Grebe, O'Shaughnessy Reservoir, Delaware County, November 27 (Chapman and Rea); Double-crested Cormorant, Pike County, November 28 (Roth); Baird's Sandpiper, November 4; Semipalmated Sandpiper, November 15; Stilt Sandpiper, October 20; and Least Sandpiper, November 21—these four shore-birds seen near Youngstown (McLaughlin); Sanderling and Black-bellied Plover, near Toledo, November 7 (Campbell); Forster's Tern, near Toledo, October 24 (Campbell); Green Heron, near Cincinnati, October 31, (Maslowski and Goodpaster); Gray-cheeked Thrush, Canton, October 16 (Ball); Short-billed Marsh Wren, near Cincinnati, October 25 (Maslowski and Goodpaster); Pipit, Buckeye Lake, December 5 (Claugus); Red-eyed Vireo and Blue-headed Vireo, Canton, October 16 (Ball); Black-throated Green Warbler, near Woodsfield, October 24 (Claugus); Henslow's Sparrow, near Cincinnati, October 24 (Maslowski and Goodpaster). A flock of Evening Grosbeaks was reported from near Painesville, November 10 (Clay), but no later reports have been received. Most observers found that the fall flight of Ducks was somewhat below average, both in number of species and of individuals, but it is gratifying to note that the Ruddy Duck was reported from no less than 16 localities, the largest number being 180 seen at Pymatuning Lake, October 31 (Peters and Hicks).

Winter-birds: The following records are presented as a supplement to the record of the wintering birds of the region as shown by the Christmas Census lists published in the last issue of BIRD-LORE. Whistling Swan, near Toledo in the Erie Marsh, January 23 (Campbell); Canada Goose, several localities in northern Ohio, December and January; Blue Goose (1 immature bird which decoyed to a flock of captive Geese and Ducks), near Columbus, November to January (Rea and Hicks); Shoveller, Erie County, January (Hicks); Greater Scaup, Ashtabula County, January (Hicks); Redhead, Erie County, January (Hicks); Black Vulture, near Clarksville, January (Walker); Golden Eagle, Highland County, 1 captured about December 1 (Hicks); Sora, near Toledo, January (Campbell); Hungarian Partridge, several localities in northwestern Ohio, December and January; Snowy Owl, several records referring probably to at least 5 birds seen between November 9 and December 29 in Wood County (Chapman), near Toledo (Campbell), at East Cleveland and near Kirtland (Aldrich); Yellow-bellied Sapsucker, near Cincinnati, January 2 (Maslowski and Goodpaster); Long-billed Marsh Wren, near Toledo, January (Campbell); Myrtle Warbler, near Cincinnati, two localities, January 2–16 (Maslowski and Goodpaster); Pine Grosbeak, near Portsmouth, December 2 (Roth); Redpoll, Cuyahoga Falls (Mitchell), Akron (Smith), Chagrin Falls (Aldrich), and Toledo (Campbell), January 16–27 (first three observers all report that the Redpolls were feeding on seeds of black birch); Vesper Sparrow, near Dayton, January 23 (Blincoe).

Early spring migrants: During the first week of February there occurred a well-marked migration involving several species. At Buckeye Lake, Canada Geese appeared first on February 5, Ruddy Duck and Shoveller on February 10 (Claugus). At Salem the first Baldpate, Pintail, Buffle-head, Ring-neck, and Common Loon arrived on February 13 (Baker), while Grackles and Rusty Blackbirds were seen February 14. A flock of 91 Turkey Vultures was reported at Rockbridge on February 6 and migrants of the same species were noted at Buckeye Lake, February 10 (Claugus).—C. F. WALKER, *Dayton, Ohio.*

Chicago Region.—But for heavy precipitation on October 18-19, normal weather prevailed to November 15, following which, with the exception of 4 days, the temperature remained below normal to December 15. After this date, fluctuations about normal were recorded to January 13; an 11-day period of abnormal temperatures followed, terminating in a rise to 52° F. on the 24th accompanied by 1.2 in. precipitation, and the month closed with two drops to subnormal temperature, though at no time were any significant extremes or sub-zero periods recorded. The first half of February brought unseasonably warm weather and considerable precipitation, the temperature reaching 63° F. on February 13.

A number of more or less unusual departure dates of summer residents and migrants have been reported and are tabulated below (see preceding reports for details of tabulating method). Other records of interest are included; attention is drawn particularly to the late Sandpiper records.

Blue Goose	10–24	ID	Baldwin	10–23
Snow Goose	11– 2	MS	Dreuth	10–29
Gadwall*	11–25	ML	Black	10–18
Green-winged Teal	11–25	ML	Black	11–12
Duck Hawk	10–17	LP	Dreuth	10–15
Florida Gallinule†	10–16	MS	Himmel	9–30
Black-bellied Plover	11–12	LP	Dreuth	11– 6
Pectoral Sandpiper	11– 2	MS	Nork	10–12
Baird's Sandpiper	10–26	MS	Nork	10–11
Dowitcher†	10–31	MS	Clark	
Sanderling	11–16	LP	Dreuth	11– 6
Franklin's Gull	10–21	LP	Dreuth	
Black Tern	10–20	LP	Nork	10–18
Orange-crowned Warbler‡	11–25	BI	Reuss	10–28

*Nine reports of this species; 12 ind. highest single report.

†This record supersedes that published in the November–December issue.

‡Banded at Oak Hill Cemetery, Blue Island.

Key to localities: BI, Blue Island; ID, Indiana Dunes; LP, Lincoln Park; ML, Maple Lake; MS, McGuiness Slough.

The winter has not been so markedly mild as that of 1936-1937, but abnormal temperatures were recorded during half of the four-month period without any heavy snowstorms or prolonged, extremely subnormal temperatures during the other half; consequently, a great variety, though small numbers, of birds usually wintering farther south have remained, as is evidenced by the following records: Baldpate, Canvas-back, Buffle-head in addition to numerous Scaup, American Mergansers, and Golden-eye, January 29, Public Service Pond, Waukegan

(Johnston); Kingfisher, wintering in Chicago (Palmquist); Yellow-bellied Sapsucker, December 21, Palos Hills (Reuss); Hermit Thrush, December 15, Marley (Barcember 26, Lake Geneva (Palmquist); Bronzed Grackle, December 25, Chicago (Palmquist); White-throated Sparrow, December 5, Waukegan (Clark), and wintering at Oak Hill Cemetery (Reuss); Fox Sparrow, wintering at Waukegan (Lyon) and Oak Hill Cemetery (Reuss).

Species	Times rep'd (frequency)	Highest individual report	Average no Total÷freq.	Total individuals
Slate-colored Junco	23	250	33	767
Eastern Crow	30	125	23	677
Tree Sparrow	14	83	18	251
Purple Finch	16	50	13	205
Horned Lark	10	174	20	203
Pine Siskin	14	20	14	193
Cardinal	24	10	6	138
Starling	13	40	10	135
Black-capped Chickadee	23	14	6	130
Blue Jay	22	9	4	77
English Sparrow	6	26	13	76
Goldfinch	15	15	5	72
Downy Woodpecker	22	11	3	66
Pheasant	20	10	3	54
Herring Gull	14	15	4	50
Cedar Waxwing	8	15	6	49
Red Crossbill	9	6	5	42
Robin	12	4	3	37
Golden-crowned Kinglet	9	5	3	31
Hairy Woodpecker	19	3	2	30
White-breasted Nuthatch	15	4	2	30
Tufted Titmouse	10	5	3	25
Common Redpoll	6	6	4	24
White-winged Crossbill	11	2	2	20
Red-breasted Nuthatch	13	2	1	18
Red-shouldered Hawk	9	3	1	12
Lapland Longspur	2	8	5	11
Song Sparrow	6	3	2	11
Red-winged Blackbird*	1	(Pitelka)		11
Red-tailed Hawk	5	1	1	5
Flicker	5	1	1	5
Brown Creeper	4	2	1	5
Cooper's Hawk	4	1	1	4
Marsh Hawk	3	2	1	4
Mockingbird	3	1	1	3
Rough-legged Hawk*	2	1	1	2
Reported by—		(Clark)		
Great Horned Owl*	2	1	1	2
		(Clark)		
Fox Sparrow*	2	1	1	2
		(Stein)		
Meadowlark	1	(Nork)		2
Bohemian Waxwing	1	(Clark)		2
Sparrow Hawk	1	(Reuss)		1
Ring-billed Gull	1	(Cassel)		1
Mourning Dove	1	(Wiles)		1
Screech Owl	1	(Clark)		1
Snowy Owl	1	(Camras)		1
Long-eared Owl	1	(Pitelka)		1
Short-eared Owl	1	(Nork)		1
Northern Shrike	1	(Nork)		1
Montana Junco	1	(Clark)		1

*Species reported by one observer only; name given.

TOTAL SPECIES—49.

About one-fourth of the field lists submitted for the present report come from the Morton Arboretum. These, totaling 30, and covering 21 different days, are distributed more or less regularly between November 25 and February 13 and provide an excellent survey of the very unusual winter population found there this season. The Morton Arboretum, a 700-acre rectangle cut by the Dupage River, is located near Lisle in Dupage County, 25 miles west of Chicago. As Beecher has stated, "The Arboretum is unique in this region, first of all as an unrivaled upland forest of elms and oaks, and secondly for the 4,500 odd trees and shrubs which have been introduced." The eastern half is largely virgin timber, but it is the western half, planted with many fruit- and seed-bearing deciduous shrubs and trees and conifers, that attracts birds and ornithologists. At the left is the list of species observed as per details given above; these are tabulated in the order of their abundance based on the total seen for all trips. Average number of individuals per trip *when seen* is given in preference to average number per trip (total divided by 30); the former is probably the more accurate figure since these field trips were not always made with the purpose of a complete census of the area, and, furthermore, the trips were not of equal length. Although the period covered includes February 13, on which date numerous migrants appeared, these were eliminated and the table presents what is believed to be a purely winter population.

Migrants appearing during the first half of February will be considered in the next report.—RUDYERD BOULTON and FRANK A. PITELKA, *Field Museum, Chicago, Ills.*

tel), and December 26, 'Eggers Grove' (Stein); Rusty Blackbird, December 18, Blue Island (Bartel), and December 27, Park Ridge (Duncan); Brewer's Blackbird, De-

Minnesota Region.—The late fall and winter weather to the present time has averaged comparatively mild for Minnesota, but the mildness has been interruped occasionally by spells of intense cold and blizzard-like storms. After an unusually

early snowstorm in mid-October, no really cold weather occurred until the first week in December. Thanksgiving Day was mild at Minneapolis with a noon temperature of 47°. December was marked by brief cold waves, not very severe in the southern part of the state, but the mercury dropped to -28° to -30° farther north. Christmas was a bitter cold day all over the state (-28° at Bemidji). The New Year was ushered in by "the worst gale in 32 years" on Lake Superior, doing much local damage along the north shore. Subzero temperatures, often far below, prevailed over most of the state until January 10. Again, after a period of record mild days, the last week of the month brought bitter cold, high winds, and drifting snows that were hard alike on man and wild life. February thus far has been more moderate. A freak electric storm at Albert Lea on the 8th killed 3 cows in a barn. The period ended with subzero temperatures and falling snow all over the state.

There have been frequent snowstorms during the winter, but the snow has not lain long on the ground and there is, unfortunately, no heavy blanket anywhere, even in the north woods—unfortunate, because the moisture is greatly needed. October, November, and December were together 1.43 inches short of normal, which is said to mean a shortage of 155 tons of water per acre.

The following late-fall leaving-dates are from the fall migration report of E. D. Swedenborg for the vicinity of Minneapolis: Least Flycatcher and Tree Swallow, October 2; Wood Pewee, October 3; Palm Warbler and Towhee, October 10; Phoebe and Pectoral Sandpiper, October 24; Lesser and Greater Yellow-legs, October 31; Coot, November 17; Pied-billed Grebe, November 11.

A surprising late record was a male Baltimore Oriole seen by Goodman Larson on November 16, on the University Farm Campus, St. Paul. The latest previous date is September 23, 1922.

A Great Blue Heron wintered about spring runs at Newport, just south of St. Paul (R. A. Kortmann). Mr. and Mrs. E. D. Swedenborg made an all-day census of winter bird-life on January 22 to compare with one reported in BIRD-LORE for December 26. They found 19 species, and a total of 144 individuals, of which 30 were Ring-necked Pheasants, 16 Downy Woodpeckers, 10 Blue Jays, 19 Chickadees, and 18 White-breasted Nuthatches.

Aside from the usual Snow Buntings, Lapland Longspurs, and Redpolls, winter visitants, apparently, have been scarce. Pine Grosbeaks have been numerous all winter at Duluth (Miss Lakela and Mrs. Olin), but the usual Bohemian Waxwings and Evening Grosbeaks have been there. Mrs. Herbert D. Shore, of Detroit Lakes, reported a large flock of Bohemian Waxwings at that place early in January, the only record so far.

Mr. P. O. Fryklund, of Roseau, in the northwestern corner of the state, wrote January 31 that Hawks and Owls are extremely scarce this winter, even the usually common Great Horned Owl; Rough-legged Hawks none and only 1 Goshawk. Rabbits and mice are both scarce, which may account for the absence of predatory birds. Mr. Fryklund continues, "As to game-birds, I am pleased to inform you that several good-sized flocks of Sharp-tailed Grouse have been seen in various parts of the county. Also a fair number of Pinnated Grouse, but not to such an extent that an open season for killing these birds should be permitted for a number of years to come. Ruffed Grouse are extremely scarce here and have been for the past two years. The Ring-necked Pheasant is about exterminated hereabouts, the result, I presume, of the intensely cold winter two years ago and the deep snow which covered all food, followed by a wet spring which undoubtedly had a disastrous effect on the young broods, if there were any. The Hungarian Partridge is occasionally seen in small coveys but is scarce. A flock of 22 Bob-white Quail was seen a few days ago by Mr. Broughton, of Roseau, near Halma, Marshall County. This is the first report of this bird that has come to my notice so far north." There is a record of the Bob-white at Warren, Marshall County, many years ago, but this is the first report of its presence in the upper Red River Valley in recent years. Mr. Fryklund comments on the exceptional appearance at that far northern locality of a flock of 100 Cedar Waxwings on January 23.—THOS. S. ROBERTS, *Museum of Natural History, University of Minnesota, Minneapolis, Minn.*

St. Louis Region.—Spring arrived here in November and never left, save for occasional short periods when winter stepped in to scatter small portions of snow and ice over eastern-central Missouri. Rain has been about average until the middle of February, when a long, continuous soaking rain caused the Meramec River to overflow its banks and lower Mississippi River tributaries to threaten floods.

From many comments picked up, the unusually warm season has brought back a number of returning birds ahead of their usual schedule, but these reports are so varied as to make it difficult to classify the birds. There seems to be an increased number of Tree Sparrows, fewer Juncos, and Crows are numerous, despite the loosely planned efforts at organization to exterminate them.

In the St. Louis area we are somewhat concerned as to the present status of our local permanent resident bird, the European Tree Sparrow, for very few reports about it have been received other than at Horseshoe Lake, located 12 miles from St. Louis on the Illinois side of the river, where it still seems to be plentiful. Hawks, as usual, are scarce, the most satisfactory observation coming from Joplin when, on December 21, Red-tailed, Rough-legged, Marsh, and Sparrow Hawks were seen, as well as the Bald Eagle, by Gilbert Blanner. He also reported six flocks of Horned Larks and a few Lapland Longspurs.

George E. Moore, of Lebanon, comments on the number of upsets in bird population there. Due to failure of the acorn crop, birds that depend on this staple winter food have been markedly few, and since this group consists of birds that are well known and frequently noticed, observers have been consistently commenting on it, particularly on the Blue Jays, Titmice, Chickadees and Woodpeckers, excepting the Flicker, as well as winter resident Sparrows. On the other hand, due to the mild weather, some of the species ordinarily missing or few, have wintered there in more than usual numbers, Bluebirds and Mockingbirds noticeably so, with Robins, Grackles, Cowbirds and Mockingbirds wintering. Ducks, in contrast to past years in the Lebanon region, have been almost missing this winter. Up to the opening of the shooting season there were about the usual number of species, but from then on almost none. Nor did the Ducks winter on Lake Ozark in usual numbers, possibly due to food shortage, as there were almost no acorns and the water-level was very low. Pintails arrived about the usual date, February 6, but only about one-fifth the number of last year. A Turkey Vulture arrived February 13, Lapland Longspurs were present again this year and seem to be becoming more regular. Horned Larks are maintaining a constant increase.

Mr. Wayne Short, of St. Charles, and Miss L. R. Ernst, of St. Louis, visiting Horseshoe Lake, Ill., on January 8, saw 500 Mallards, 100 American Mergansers, about as many American Golden-eyes and several hundred Gulls, both Ring-billed and Herring. Mr. Short finds migration well under way in the St. Charles section, some species arriving particularly early this year. January and February netted 13 species of Ducks, although not in the usual quantity, the fault lying in the relative shortage of Pintails as compared with last year. Exceptionally early Duck dates were: Wood Ducks, February 9; Green-winged Teal, February 14; Ring-necked and Lesser Scaups, February 6; Ruddy, February 20; and Shovellers, as last year, February 24. Coots arrived February 12, American Mergansers reached a peak of 250 on February 3, and Golden-eyes 350, on February 6.

The last week in February saw Red-winged Blackbirds in enormous flocks, two of which reached approximately 1500 each, but Mr. Short's most impressive migrators were the Robins. On February 8, Dardenne Island was alive with song when between 2000 and 3000 were found in a 100-acre woods. Cedar Waxwings have been unusually abundant and Red-headed Woodpeckers have remained in good numbers all winter. Whether or not it happened to be an accidental visitor, a Montana Junco was seen by Mr. Short near Dardenne on February 4.

Roland Dede made an all-day visit to Creve Cœur Lake on February 12, but failed to find any form of water-bird life there.

The main features of the season seem to have been the shortage of Juncos and early return, in fair quantities, of the birds back from the South.—STERLING P. JONES, *Webster Groves, Mo.*

Rio Grande Delta Region.—The long summer and fall drought continued on into December. However, during the last two weeks of that month there was so much rainfall that the total for the month was above the average for past years. Since then the weather has been dry and warm. 'Spring' was quite early. The ash trees budded out from January 24 to 30 and the hackberries and willows were observed to be in bloom on January 30. The mesquite, usually said to be the last tree to bud, put on its new leaves the first week of February.

Our mild winter seems to have caused the great bulk of the usual winter residents to remain north of us this year. There is, in fact, an almost unbelievable decrease in density of winter birds throughout the region. Counts made in different areas show less than half the totals of a year ago. Reports from points along the Gulf coast, 100 to 150 miles above here, indicate where the Ducks and water-birds are, but we have had no reports concerning other groups. To give a more detailed picture, certain species will be listed giving the approximate percentage decrease over last winter: Bluebird, 95; Field Sparrow, 90; Grasshopper Sparrow, 90; Lincoln's Sparrow, 85; Vesper Sparrow, 75; Robin, 75; Savannah Sparrow, 66; Redwing, 66; House Wren, 50; Meadowlark, 50; Lark Sparrow, 50; Grackle, 50; Phoebe, 50. There are, of course, many more factors involved than the mild weather to the north of us. The long drought possibly decreased the available food-supply. At any rate, certain birds which we would expect to find more plentiful during a mild winter are also considerably decreased as compared with a year ago. Among these are the Nashville Warbler (decreased 85 per cent), the Black-throated Green Warbler (down 50 per cent), Sycamore Warbler (decreased 60 per cent), and Sharpe's Seedeater (decreased 50 per cent). On the other hand, certain western birds seem to be wintering here in increased numbers. These are the Vermilion Flycatcher, Pyrrhuloxia, and Say's Phoebe.

Wintering Sennett's Orioles are more widely distributed than before noticed, as they have been reported in Edinburg, Mission, and Harlingen during December and January, both males and females being present.

Mr. Hale sent in the following fall migration list: October 19, Rio Grande Meadowlark; October 24, Phoebe, Myrtle Warbler, Redhead, Cinnamon Teal; October 31, Cooper's Hawk; November 10, Brewer's Blackbird; November 25, Red-shafted Flicker; December 12, Prairie Marsh Wren; December 17, Western Field Sparrow; December 20, Swamp Sparrow; December 25, Hermit Thrush. He reported the Gadwall, Western Meadowlark, Golden-crowned Kinglet, Sprague's Pipit, Yellow-bellied Sapsucker, Sandhill Crane, and Audubon's Warbler had all arrived in the Mission area from one to six weeks later than in the previous year.

Migration dates from Cameron County are: October 18, Phoebe, Catbird, Western House Wren; October 19, Sora; October 26, Brewer's Blackbird; October 27, Cackling Goose (the writer was unable to approach this bird closely and the identification is based entirely on relative size—its wingspread was certainly not more than three-fifths that of the 'Canada Geese' it was with); October 31, Canvas-back; November 14, Bluebird, Yellow-bellied Sapsucker; December 5, Cedar Waxwing.

A Burrowing Owl was observed near the river south of La Joya (west of Mission) by the writer on October 24; Mr. Hale reported the first one at Mission on October 27; and the first fall record for Cameron County was November 7. This would seem to indicate that this is another of the western birds which move slowly down the river during the winter.

The Black-throated Gray Warbler is wintering in the 'big tree-vine association' south of Harlingen for the second consecutive year.

We are highly pleased to have the cooperation of a new observer, Mrs. Frank Denzer, of Alamo. She reported finding 2 Yellow-breasted Chats with a Yellow-throat and 4 Blue-headed Vireos on December 16; also that Pyrrhuloxias have made daily visits to feed-boxes in her yard since December 1. A Black-throated Green Warbler, which she picked up dead in her yard on February 10, makes the third record for the finding of this species outside the resaca and banco area during winter.—L. Irby Davis, *Harlingen, Texas.*

San Francisco Region.—The past fall and winter have invited special bird-study in central California even more than in other recent years. The extensive area and the variety of the problems make it difficult for a few observers to make much progress in solving them.

Among these problems, the harvest of food-supply by birds was remarkably prominent this year. The exceptionally heavy crop of acorns, seeds, and fruits produced by many kinds of plants insured a continuing supply through the season, and the mild weather made it possible for the birds to keep continuously at their foraging. Thus it was possible for bird students to obtain, in a short time, much information concerning the feeding habits of birds, the kinds of food selected, the manner of taking or storing food, and the interrelations among birds and plants.

Mrs. Allen writes that until January 30, when snow increased in the mountains, land-birds were scarcer in the Bay region than in any year she could remember, she thinks, because of abundance of food exposed in all sections of the state, with no concentration in the coastal lowlands. The end of January marked a decrease in birds at altitudes between 2000 and 3000 feet in the mountains of northern Monterey County.

Also of concern to some observers was the annual human harvest of birds, especially of Band-tailed Pigeons, California Quail, and the water-fowl. Pigeons have been shot for several seasons, each one with increasing concentration of shooters, with diminished individual gain, but possibly with increased destructiveness to the birds.

For a second year, water-fowl were injured by shooting in northern California less than would be expected, but for reasons opposite to the ones which favored them in 1936. In that year the scarcity of water left few suitable places for these birds outside the refuges where they soon learned to go when disturbed by shots. In 1937, exceptional flood conditions provided so many favorable places for the birds and interfered in so many ways with the shooting, that shooters generally were not satisfied with the toll of birds they got. These circumstances are being used as basis for demanding more liberal shooting regulations.

Reports of some of the less common Geese and Ducks were as follows: Canada Goose, Crystal Springs Lake, 14 reported to the Parmenters on October 22 and approximately 150 seen by them on the 26th; Black Brant, Tomales Bay, about 300 on December 6 (P.), Richardson Bay, 10 on February 8 (P. T. Wilson); Cinnamon Teal, Sears Point Toll Road, 7 on January 20 (P.); Shoveller, Alvarado, about 1000 on October 22 and January 21, Sears Point Toll Road, approximately 1000 on January 20 (P.); Redhead, Stow Lake, 3 on January 7 (P.), Lake Merced, 25 on December 15 (Mrs. Stephens), 10 on January 15 (P.), Laguna Salada, 2 on January 17 (P.).

Occurrences of other birds of special interest have been reported as follows: Turkey Vulture, Olema, 9 at one time on January 24 (Parmenters); Ferruginous Rough-leg, between Skyline Boulevard and Salada, 10 at once on November 8 (P.); Pigeon Hawk, Black Point and Ignacio, 1 at each place on January 20 (P.), Monterey, 1 on December 19 (Williams); Clapper Rail, Bay Farm Island, 15 in sight at once, December 17 (Allen); Surf-bird, Cliff House Rocks, 2 on October 27 (P.), Land's End, 2 on January 1 (H. Kirker), Pacific Grove, 25 on October 20 (R. T. Orr); Red Phalarope, San Mateo Bridge, about 100 on November 1, Lake Merced, over 100 on November 31 (Stephens), Point Lobos, 1 on December 19 (W.); Northern Phalarope, Sears Point Toll Road, over 150 on December 30 (P.); Heermann's Gull, Montara, last noted (6) on November 15 (P.); Least Tern, San Mateo Bridge, 35 on October 22 (P.); Ancient Murrelet, Point Lobos, 2 on December 22 (W.); Saw-whet Owl, Olema, 1 seen 5 miles south on December 1 (A. S. Hyde); Lewis's Woodpecker, Lafayette Park, San Francisco, October 20 (S.); Violet-green Swallow, first arrivals for the last six years, beginning in 1933, February 27, March 31, February 19, April 30, March 5, February 12 at Crystal Springs Lake (P.).

Start of the nesting season was shown by an Anna's Hummingbird working at a nest at Carmel on January 14 (Williams). Yellow-billed Magpies had nests nearly completed by mid-February in the northern Santa Lucia Mountains, Monterey County. —JEAN M. LINSDALE, *Berkeley, Calif.*